SMALLPOX AND VACCINATION
IN
BRITISH INDIA

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SMALLPOX

AND

VACCINATION

IN

BRITISH INDIA

70053

"Compulsory vaccination I detest, and voluntary vaccination I disapprove."—*Herbert Spencer.*

Price Sixpence.

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INTRODUCTION.

During the past three years various letters and articles on the vaccination question in India have been published in "The Vaccination Inquirer" and other journals, and numerous requests have been made for their re-issue in pamphlet form, for the use of those in India who are pushing forward the anti-vaccination cause in that country. The National Anti-Vaccination League have, therefore, published this pamphlet, and they hope it will be found a handy companion to all who seek authoritative information on this most important question.

2005

Except where otherwise stated, the articles have been written by the Editor of "The Vaccination Inquirer."

27 Southampton Street,
Strand, London, W.C.
December, 1911.

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"WHAT IS TRUTH?"

Astonishing letter from the Surgeon to the Governor of Bombay.

GOVERNMENT HOUSE,
MAHABLESHWAR,
INDIA.

(*No date; but received in November*, 1911).

MADAM,

I am directed by His Excellency Sir George Clarke to acknowledge the receipt of your letter of October 6th-11, and to say that vaccination is not compulsory in India, or likely to be, and that the benefits of vaccination have been amply proved here.

Yours faithfully,
T. C. LUCAS, M.B.,
Surgeon to His Excellency.

ROSE AND HARRIS, PRINTERS, BROADMEAD, BRISTOL.

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DEATHS FROM SMALLPOX IN INDIA.

In 1908 a Parliamentary Return of great usefulness was issued by the British House of Commons, in response to a motion by Sir William J. Collins. It gives the number of deaths registered in the various provinces of British India from cholera and smallpox, including the death rates per million of population, in each of the years 1877 to 1906, and from plague in each of the years 1896 to 1906.

The following table gives the smallpox deaths for the years 1878 to 1906 (with the ratio per million of population) as shown in the above return, for the three great provinces (Bengal, Madras, and Bombay) and for British India as a whole.

The earlier years (1868 to 1877) and the latest years (1907, 1908, and 1909) have been added to make the table as complete as possible, and the figures have been divided into decades to correspond with those used in Major James's book on "Smallpox and Vaccination in British India."

Year.	BENGAL.		MADRAS.		BOMBAY.		INDIA.	
	Smallpox Deaths.	Ratio per million of pop.	Smallpox Deaths.	Ratio per million of pop.	Smallpox Deaths.	Ratio per million of pop.	Smallpox Deaths.	Ratio per million of pop.
1868 to 1877				**1,261.0** (approx.)		**837.0** (approx.)	**1,436,009**	**1,032.3**
1878	12,410	206.9	56,360	1,929.5	4,475	276.5	308,461	1,690.2
1879	22,843	378.2	17,840	615.4	1,156	71.2	194,330	1,062.6
1880	22,953	380.5	14,529	504.9	940	57.9	68,700	377.0
1881	24,371	404.1	15,776	550.1	539	32.8	71.587	386.6
1882	13,651	205.2	20,159	697.9	1,630	99.1	77,191	396.7
1883	9,714	146.0	37,975	1,332.3	13,404	814.6	227,523	1,168.1
1884	18,533	278.3	61,247	2,175.6	14,438	877.5	329,663	1,695.6
1885	9,863	148.1	34,726	1,235.0	2,646	160.8	77,366	398.0
1886	4,049	60.8	17,129	610.8	876	53.2	46,922	241.5
1887	3,846	57.8	21,472	765.7	3,753	228.1	59,147	304.4
1878–87	**142,233**	**226.6**	**297,213**	**1,041.7**	**43,857**	**267.2**	**1,460,890**	**771.9**
1888	6,247	93.8	21,858	783.2	3,617	219.8	87,902	452.1
1889	8,665	130.1	29,138	1,044.1	7,066	429.4	125,382	645.7
1890	12,619	190.8	28,092	984.9	2,877	174.8	115,621	594.5
1891	16,193	227.9	41,322	1,449.2	1,491	79.2	93,732	449.5
1892	22,359	314.6	43,757	1,298.7	2,770	147.2	92,659	433.7
1893	14,531	204.5	27,289	809.9	3,567	189.5	63,178	295.7
1894	8,404	118.2	11,207	332.6	3,155	167.6	42,046	196.8
1895	13,020	183.2	5,111	152.3	2,299	122.2	44,082	206.5
1896	13,388	188.4	9,410	287.6	6,443	342.3	136,605	642.3
1897	19,655	276.6	21,678	665.0	3,835	203.8	160,217	753.8
1888–97	**135,081**	**192.8**	**238,862**	**780.7**	**37,120**	**207.6**	**961,424**	**466.0**
1898	14,269	200.8	20,490	616.3	1,834	97.4	55,984	262.6
1899	13,116	184.6	16,999	506.8	1,946	103.4	50,333	233.1
1900	20,620	290.1	27,692	839.0	9,885	525.2	87,569	406.1
1901	37,680	506.3	26.202	702.2	5,340	288.9	89,378	398.5
1902	57,430	771.6	24,967	688.0	2,189	118.4	115,443	511.1
1903	30,459	409.2	15,015	402.4	2,732	147.8	93,693	413.1
1904	17,330	232.8	9,891	269.6	4,289	232.1	55,232	244.1
1905	7,213	144.6	18,540	504.7	16,985	919.0	70.962	314.3
1906	22,206	439.5	29,840	817.9	4,063	219.8	109,583	484.6
1907	29,066	575.2	22,455	617.6	1,862	100.7	103,988	460.1
1898–07	**249,389**	**375.5**	**212,091**	**596.5**	**51,125**	**275.3**	**832,165**	**373.9**
1908	35,966	711.8	22,204	604.3	2,526	136.7	170.694	754.0
1909	38,609	764.5	18,862	514.0	5,019	271.6	101,152	447.0
1910								
1911								
1912								

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INDIA UNDER SERUM TREATMENT.

THE lessons of Sir William J. Collins's Parliamentary Return ought not to be lost upon the Indian Press; and in the hope that through the newspapers some influence may be brought to bear upon those local and central administrations which are evidently too ready to make India the field of serum experiments, the following letter was sent in July, 1908, to upwards of 150 Indian newspapers :—

To the Editor of The ——.

SIR,—May I be allowed to draw the attention of your readers to a return moved for in the British House of Commons by Sir William Collins M.D., M.P., and issued by the India Office on May 30th this year? This return gives the mortality from smallpox and cholera in India for the 30 years ending with 1906, and the plague deaths since 1896 (the year of the first outbreak). The total mortality from these diseases for the 30 years is as follows :—

1877	..	808,489	1892	..	819,026
1878	..	610,208	1893	..	280,008
1879	..	561,210	1894	..	563,693
1880	..	188,037	1895	..	355,168
1881	..	232,468	1896	..	608,503
1882	..	426,470	1897	..	758,978
1883	..	473,861	1898	..	296,759
1884	..	614,595	1899	..	323,989
1885	..	454,576	1900	..	958,367
1886	..	256,178	1901	..	597,021
1887	..	534,195	1902	..	792,444
1888	..	356,762	1903	..	1,090,992
1889	..	542,449	1904	..	1,186,077
1890	..	407,231	1905	..	1,453,569
1891	..	678,096	1906	..	1,100,457

The tremendous increase in the mortality for the years 1903, 1904 and 1905, was due to the plague deaths, which rose from 2,219 in 1896 (the first year of the outbreak) to 684,445 in 1903; 938,010 in 1904; and 940,821 in 1905. In 1906, the plague deaths fell to 300,355, but the cholera deaths rose to 690,519, bringing the total mortality again considerably over a million. Smallpox in 1906 was also worse than for several years previously, although the annual deaths have never fallen below 42,000 in any year, and only three times since 1877 have they been less than 50,000.

Taking each disease separately, first as regards plague. The Return shows that plague has been epidemic in India for 11 years. During that time Haffkine's plague serum has been very widely used, and yet the deaths have risen from 2,219 in 1896 to 940,821 in 1905. Of what use has Haffkine's serum been in controlling the disease? The following figures show the annual mortality from plague since 1896:—2,219; 47,974; 89,265; 102,369; 73,576; 236,433; 452,865; 684,445; 938,010; 940,821; 300,355; making a total of 3,868,332 deaths!

Then taking cholera next. The deaths in 1906 from this terrible disease were more than in any of the preceding 29 years, with the exception of 1900 and 1892, when they were 797,222 and 726,367 respectively. I see it reported in "The Lancet" (London), of June 27th, that cholera is very bad in the coal district just now, and that Mr. Haffkine has gone to Jherria to perform cholera inoculations. When will this insane desire to control disease by spreading it die out?

Lastly, let us consider smallpox. This disease has caused 3,334,225 deaths during the 30 years for which the Return was made, an average of 111,140 per annum. In spite of the enormous amount of vaccination reported every year in the Indian Government Reports, the number of deaths from smallpox in 1906 was nearly as many as the average for the 30 years (being 109,583), showing that vaccination has no power whatever over smallpox.

It may be urged that these terrible scourges do not materially affect the general death-rate in India. I have before me the figures for the years 1885—1906, and the general death-rate per 1,000 for these years is as follows:—26.37; 25.51; 28.03; 26.4; 28.21; 30.12; 28.4; 32.51; 25.75; 33.98; 28.94; 32.04; 36.03; 25.56; 30.01; 38.91; 29.45; 31.67; 34.91; 33.05; 36.14; and 34.73. If the figures given earlier in my letter are compared with these it will be seen that, generally speaking, a marked rise in the mortality from smallpox, cholera and plague combined, is followed by a rise in the general death-rate. For one or two years this is not so, but, taking the years generally, it is.

What, then, do these figures show? First, that the general death-rate in India is higher by a good deal now than it was in 1885; secondly, that in spite of an enormous amount of vaccination, smallpox is no more controlled now than it was 20 years ago; thirdly, that in spite of huge sums being spent, and a large staff maintained for plague inoculations, the mortality from plague steadily rose from the year it broke out (with a decline in only one year) until it reached nearly a million deaths in 1905; and, finally, that the serum treatment in India is an absolute failure.

Cannot the press in India be induced to take up the subject of inoculation for these terrible diseases? Surely figures such as those given in the Return alluded to must prove the worthlessness of vaccination for smallpox and of plague inoculation, and then there is also the question of their injuriousness. The House of Commons had before it some time back a Parliamentary Paper referring to the deaths of some natives after plague inoculations; while we in England with our, comparatively speaking, small population, had 29 deaths of infants in 1906 from cowpox and other effects of vaccination. This does not nearly represent our vaccination fatalities, and in India there must be many more.

Zymotic diseases are caused by bad food, famine, overcrowding, bad drainage, neglect, dirty houses, and impure soil, lack of pure water, and filthy surroundings. Alter the sanitary conditions as we in England altered them by the passing of the Public Health Act of 1875, and you will gradually wipe away these fearful scourges. The difficulties, one knows, are immense, and the problem is one of the largest our rulers have to face, but a start could be made by turning the present plague inoculation and vaccination staff into a sanitary staff, and using the money now being wasted on inoculations in teaching those who can pass the knowledge on to their own fellow-countrymen the elementary rules of health. There are, doubtless, religious and other difficulties in the way, and the famine

NATIONAL ANTI-VACCINATION LEAGUE OF INDIA

is a potential cause of disease, but no marked reduction will be seen in the deaths from zymotic diseases until inoculation is barred and sanitary laws observed.

Yours obediently,

(Signed) CHARLES GANE,
Hon. Sec. National Anti-Vaccination League.
50 Parliament Street, London.

SMALLPOX IN INDIA.

THE following "stream of facts," which was sent by Mr. Charles Gane to 150 Indian papers, in October, 1908, should do much to enlighten Indian public opinion in regard to the futility of cowpoxing as a remedy for smallpox, and the iniquity of its compulsory enforcement:—

Increase of Vaccination.

"In a recently-issued Government Report, entitled 'Statistics of British India for 1906-07, and preceding years, Part V.,' there is a table on page 80, giving the ratio of successful vaccinations in each 100 estimated births from 1882-83 down to 1906-07. This table shows a steady increase from 21.76 in 1882-83 to 42.6 in 1906-07. These figures by no means represent the actual state of the native Indian population in regard to vaccination, for every year the number of vaccinations recorded includes as many persons over the age of 12 months as under. For instance, in 1905-06 there were nine and a quarter millions of vaccinations, but the number of children under one year of age who were vaccinated was just over four millions. Of the remaining five millions, nearly three and a half millions were from one to six years old. So also in 1906-07, there were about nine millions of vaccinations, but of these only four millions were vaccinations of children under one year. Thus it will be seen that, although 56.2 of the births occurring in 1905-06 were not accounted for in the vaccination statistics of that year, a large number must have been included in the three and a half millions between the ages of one and six years vaccinated in the following year. I cannot find out from Government Reports how many children die before they are old enough for vaccination, but the probability that this number is large should be borne in mind when considering these figures. However, leaving out of account the question whether the Government figures express the real truth as to the vaccinal condition of the natives or not, they do show a steady increase in the proportion vaccinated year by year, and in the 25 years given in the above-mentioned table the number has doubled.

Smallpox Increases also!

"Bearing this fact in mind, and comparing these figures with the smallpox death-rate per million of the Indian population, why do not we find a steady proportionate decrease in smallpox? Starting with the year 1883, what do we find? In that year, and in 1884, there were evidently terrible outbreaks of smallpox, for the ratio per million was 1168.1 and 1695.6 respectively. But in the next year (1885) the ratio dropped to 398 per million, and since vaccination was steadily increasing, we should naturally look for the smallpox deaths to gradually decrease, seeing what a large number of natives were becoming protected. But we find no such result. In 1886, it is true, the rate went down to 241 per million, but it rose the next year to 304, and again the next year to 452, mounting in 1889 to 645. Then there was a drop to 594, and during the next four years the ratio declined to 196 per million in 1894 (the lowest for the whole period under review). But in 1895 it rose to 206, in 1896 to 642, and in 1897 to 753 (the worst year since 1884). The next two years were not nearly so bad, being 262 and 233 respectively, but in 1900 the ratio rose again to 406, fell slightly to 398 in 1901, rose badly to 511 in 1902, fell again to 413 in 1903, and still more in 1904 to 244, rose again to 314 in 1905, and still more to 484 per million in 1906. It will thus be seen that the ratio of smallpox deaths per million was higher in 1906 than in 1885, in spite of vaccinations having doubled. How can anyone believe that vaccination protects from smallpox, or mitigates the severity of the disease in the face of such figures?

The Cruelty of Compulsion. An Appeal.

"I have been told by a lady missionary just returned from India that in the Central Provinces the mothers are compelled to have their children vaccinated on both arms. They have asked her in many villages to bring this matter to the notice of someone in authority, as they resent it very much. In any case, vaccination is useless, and it is a cruel operation as well; but to vaccinate on both arms in a country where a dirty floor is the most common place for the children to lie is doubly cruel. It seems strange the Indian press refuse with one accord to discuss this matter. The figures are plain enough for anyone who cares to investigate them. The absolute failure of vaccination to stop smallpox or to mitigate it is demonstrated again and again and yet nothing is done. Disease and death are spread by this means, and all for no good. Will no one take up the matter? We in England are on the road to the complete abolition of compulsory vaccination, and even now all children born recently can easily be exempted from the operation. Men and women in England have taken a strong stand and have spared nothing in their efforts to rid the country of this terrible curse. Is there no one in India who will do the same? A perusal of the various Government Reports dealing with vaccination, plague inoculation, &c., makes one wonder whether the recent unrest in India may not have as one of its contributory causes the enforcing of these various vaccines and serums on the people. Continually we are met with phrases showing the hatred of the people for vaccination and plague inoculation.

"I earnestly trust you will print my letter, in the hope that someone with time and money will take up this matter in the interest of the natives, and also of the European employees, who are being forced, in some towns, according to recent reports, to have their children vaccinated."

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THE FAILURE OF VACCINATION IN INDIA.*

By Mr. K. J. TARACHAND, B.A. (Bombay).

IF one thing more than another comes out forcibly in the Reports on Vaccination of the various provinces of India, it is that if the vaccinists wish to make a show of supporting their case they must resort to sophistries, not appeal to facts. In the Bombay Presidency the number of successful cases of primary vaccination is steadily declining. In 1905-6 the percentage of success was 91.86; in 1907-8 it dwindled to 89.41. The number of infants successfully vaccinated during the year 1907-8 was 370,188 as against 384,267 in the preceding year. Revaccination seems to fare no better. During the triennium the percentage of success declined by 3. The work of the Local Fund Vaccinators betrays an equal degree of failure. In 1905-6 the number of successful operations was 410,893; in 1907-8 it dropped to 398,511. Equally unsuccessful were the activities of the Municipal Vaccinators. In 1905-6 the number of successful primary cases was 61,930; in 1907-8 it stood at 55,967. Again, successful re-vaccinations fell from 5,469 in 1905 to 4,304 in 1907. A like degree of failure attended the performances of the Native State Vaccinators. The triennium witnessed a diminution of 7,836 in the number of primary operations, and of 545 in that of revaccination. As poor results are shown by the Cantonment records. In 1905 the number of successful primary operations was 1,764; in 1906 it fell to 1,350; 1907 saw a further drop to 1,208. Within three years successful re-vaccinations declined gradually from 1,490 to 379. Dispensary work does as little credit to the antivariolous treatment. There was a marked lull both in primary and secondary cases, the former of which decreased by nearly a thousand, and the latter by over a thousand. It is worth noting that this steady decline in success was *pari passu* with the increase in the strength of the department of one inspector and three vaccinators.

The United Provinces have the same tale to tell. Here the total number of persons vaccinated during 1907-8 was 1,702,139, as compared with 1,675,060 in the preceding year. But the number of successful primary vaccinations in 1907-8 was 1,510,053 against 1,515,150 in 1906-7 and 1,544,152 in 1905-6. Again, the death-rate from smallpox rose from .07 in 1905 to .28 in 1906 and to .47 during the year 1907. We may also note that in 1907-8 the percentage of successful primary vaccinations in proportion to births was 48.71 for children under one year, 23.90 for those over one and under six years, and 76.47 for all age periods, against 48.72, 26.76 and 78.66 respectively in 1906-7 and 48.25, 26.81 and 78.13 in 1905-6. Collaterally with these poor results, the expenditure rose from Rs. 1,50,971 in 1906, to Rs. 1,62,530 in the year 1907. The total number of calves operated upon at the Lucknow bovine lymph depôt was 114 in 1907, compared with 107 in the preceding year, whilst the number subjected to the vaccinator's knife at the Patna Dangar establishment rose from 96 in 1905 to 133 in 1906, and to 184 in 1907.

The situation in Bengal was a replica of that in the United Provinces. Three years ago the number of deaths from smallpox was 12,090; the close of the triennium saw it leap to 31,614. Of these 31,614 victims, 13,515 were reported as vaccinated and 11,943 as unprotected. The total average cost of vaccination for the period under review was Rs. 1,78,233, against Rs. 1,38,928 for the preceding triennium. Thus, here also success was in inverse ratio to the increase in expenditure. The number of calves operated upon at the Calcutta depôt during the triennium was 643 in excess of those vaccinated in the preceding period.

In the Punjab the activities of the Vaccination Department were equally infructuous. The percentage of success in primary operations performed by the district staff during 1907-8 was 99.09 as against 99.39 in 1906-7, and 99.25 in 1905-6. In re-vaccination, the falling-off in success was even more marked, the percentage having declined from 83.78 in 1905-6 to 76.29 in 1907-8. The work of the Special Staff, both in primary and secondary operations is represented by the following figures:—1905, 98.54 and 76.75; 1906, 98.94 and 71.16; and 1907, 98.31 and 74.6. The proceedings of the Cantonment Staff manifest a fall in the percentage of successful re-vaccinations from 77.76 in 1905 to 72.22 in 1906, and to 69.39 in 1907. The decrease in the percentage of success in primary cases by 4 and in that of re-vaccinations by 13 close the disastrous record. This continuous drop in success synchronised with the increase in the cost of the Department from Rs. 97,702 in 1905 to Rs. 1,04,112 in 1907.

To pass from statistics to the critical portions of the reports is to pass from self-defeat to self-condemnation. The Bombay Report makes mention of opposition to vaccination encountered in Gujarat and Sind. In Orissa also serious resistance was offered, especially in the case of infants under one year of age. Yet the reports are couched in such terms as to convey the impression that the people take kindly to Jenner's treatment. It is undoubtedly the persistent stand made against it that makes the Sanitary Commissioner for Bengal remark, that under present circumstances compulsory vaccination is quite out of the question. The same officer describes the vaccinators as poorly educated and of ill-formed character, and charges them with receiving illegal gratifications; whilst the inspecting staff, which is mostly recruited from vaccinators, is accused of sharing in the spoils of the latter and of shielding them. To those who are acquainted with the history of vaccination there is nothing surprising in these indictments. We know that gold appealed powerfully to Jenner; to say, therefore, that vaccinators in this country are actuated by the desire for lucre is simply to assert that they preserve intact the traditions of their profession. Again, the same authority observes that the figures reported by the inferior grades are unreliable. In their resolution on the Punjab Vaccination Report the Government of that Province remark, "The personal equation appears to enter largely into the calculations of the success of the operations, for while one Deputy Sanitary Commissioner found 61 per cent. of successes in re-vaccinations, the other found 99 per cent.; and similarly in the same districts the different

* Reprinted from *The Vaccination Inquirer*, April 1st, 1909.

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inspecting officers record very different proportions of success. It can hardly be that the facts which came under the notice of the different officers differed so greatly as the statistics would imply, and it would seem that a more accurate definition of what is a successful re-vaccination is required." Reference is also made by the Compiler of the United Provinces Report to the falsification of returns. These statements need not again create any surprise. That the advocates of the anti-variolous treatment devote the bulk of their time and energy to juggling with statistics is a notorious fact. Vaccination is a discredited fad and must go. Instinct and experience alike are against it.

"The Parsi" (Bombay), of the 17th January, 1909, contained the foregoing article in the form of a letter to the Editor, and the same paper of the 21st February, 1909, also contained the following letter from Mr. Tarachand :—

THE COLLAPSE OF VACCINATION.

SIR,—A triennium may be too short a period to test the results of a system, but a decade is a sufficiently long duration of time to warrant conclusions. And the records of a decade clench the anti-vaccinists' case based on triennial results. In 1896 the number of deaths from smallpox in the Bombay Presidency was 6,443. In 1897 it declined by nearly 3,000. The following two years witnessed a further fall to nearly 2,000. But in 1900 there was a sudden leap to 9,885. Then, again, the next two years were marked by a steady decline. But this was only the usual calm preceding the storm. During the succeeding triennium we are confronted with the upward curve. In 1903, deaths from variola were in excess of those in the previous year by 543; in 1904 they increased to 4,289; the record figure of 16,985 in 1905 sang the dirge of Jenner. To put matters in a nut-shell: in the quinquennium ending 1900, 23,943 persons succumbed to smallpox; whilst in the succeeding lustrum the number of its victims rose to 31,535. To come nearer our own times. Let us take the decade ending 1907. The increasing virulence of the disease is evidenced by the occurrence of nearly 9,000 more deaths in the latter than in the former quinquennium. To impeach the conclusiveness of these figures is to deny the testimonial value of statistics."

CORRESPONDENCE WITH LORD MORLEY

(Reprinted from *The Vaccination Inquirer*, October 1st, 1909).

Letter to Lord Morley.

July 5th, 1909.

MY LORD,—

At the urgent request of an ardent native opponent of vaccination in India, my Council have instructed me to write to your Lordship on the subject of vaccination. Your Lordship is aware that in England for many years there has been a fierce controversy over the merits of vaccination, and men of sound judgment and high intellectual powers have ranged themselves on the side of opponents of the practice. Men like the late Lord Salisbury realised that Englishmen ought not to be forced to have their children vaccinated, while Herbert Spencer, Dr. Alfred Russel Wallace, and Dr. Charles Creighton came by careful investigation and consideration to the conclusion that vaccination itself is a fraud and without scientific foundation. Even the supporters of vaccination have had to surrender, one by one, the claims they originally made for the practice, and those doctors who have had any experience of smallpox will only contend that children under 10 years of age are protected from smallpox by vaccination, and that even these may take the disease but will probably not die from it. These same doctors hold, with regard to adults, that only those recently re-vaccinated are protected from smallpox, and thus it follows that the bulk of the inhabitants of the British Isles are quite unprotected according to this theory. The experience of the British Isles, however, has proved that the only thing that matters where smallpox is concerned is the presence or absence of dirt, neglect, overcrowding, bad air, or bad food.

Bearing in mind then these two things (1) that the supporters of vaccination have surrendered nearly all their claims for vaccination, and (2) that the experience of the British Isles shows that cleanliness and a thorough application of the principles of the Public Health Act of 1875 are the means to safeguard the people from smallpox, my Council would urge your Lordship seriously to consider the position of the millions in India who are under the British Government and for whom England is responsible. Government reports frequently speak of the opposition to vaccination encountered by native vaccinators. The fact that vaccination has had to be made compulsory wherever it was possible in India to do so speaks for itself. If the natives had been so eager to adopt the practice, there would have been no need to compel them to do so. If your Lordship would make inquiries, my Council venture to think that it would be found that a large amount of distrust and suspicion has been engendered in India through such operations as compulsory vaccination.

You may, however, urge that the results of the compulsory law prove that it has been of benefit to the native population. My Council earnestly desire you to study the statistics showing that though the number of infants vaccinated has doubled in the last 20—30 years, the smallpox death-rate has only fluctuated during that period, and shows no decided improvement. Seeing, too, the unreliability of the figures furnished by many natives, surely the English experience forms a better standard to judge of the truth or otherwise of the claims of vaccination. That experience has proved their falseness.

Your Lordship has at hand, however, one reliable set of figures and facts which demolish the claim for vaccination, viz., the reports of the Army Medical Department. The statistics of soldiers attacked by smallpox in India show a heavier death-rate per million men than that per million living in the British Isles, in spite of the fact that the soldiers are thoroughly vaccinated and re-vaccinated, are in the prime of life, and are properly looked after.

My Council is aware of the huge task in front

of the Government of India before the present vaccination system could be altered, but they would suggest that a Conscience Clause could be in some way introduced similar to that existing in the English law. They could also stop all prosecutions for non-vaccination. If it were found that gradually the vaccinators had no work to do through the refusal of the people to bring their children for vaccination, the Government could arrange for their employment in the Sanitary Service. Some urge that it does not matter, adding one more superstition to the hundreds already believed by the poor ignorant natives of India, but my Council venture to think that this particular superstition is rather forced on them and is not willingly adopted by the masses.

From a perusal of some of the Indian Government Reports, I notice that the measures urged for the prevention of plague and disliked by the natives have in many districts been withdrawn, in spite of the fact that those urging them believed in their efficacy. As vaccination is also disliked by the natives, and has the additional demerit of being a fiercely contested matter, my Council most earnestly ask your Lordship to withdraw the compulsory clause of the Acts.

I have the honour to be,
Your Lordship's most obedient servant,
L. LOAT, Secretary,
National Anti-Vaccination League.

THE RIGHT HON. LORD MORLEY.

Lord Morley's Reply.

The following is a copy of Lord Morley's reply :—

India Office, Whitehall,
London, S.W. 20th July, 1909.

MADAM,—

I am directed by the Secretary of State for India in Council to acknowledge the receipt of your letter dated the 5th July, 1909, on the subject of vaccination in India, suggesting the withdrawal of the clauses, in the Vaccination Acts in force in India which make vaccination compulsory.

In reply I am to say that the Secretary of State will cause the representations of your Society to be transmitted to the Government of India. But this should not be taken as an admission on his part that vaccination is useless and unnecessary in India or that the compulsory powers which are in force in many of the larger towns in that country could be dispensed with without serious danger to the public health. Under the Vaccination Act of 1880, which is the law in force in the greater part of British India, vaccination is not made compulsory in any municipality except upon the application of the municipal body, in pursuance of a resolution passed by a majority of the members present at a special meeting, and after a sufficient time has been given to the inhabitants to show cause why the application should not be acted upon by the Local Government. Compulsion where it is applied has therefore public opinion behind it. Furthermore, the law enjoins that the magistrates who enforce compulsion shall, as far as practicable, be natives of India and not paid servants of the Government, and leaves them free to decide in each case, in which the parent or guardian of a child is summoned for failing to comply with the notice of the Superintendent of Vaccinatton whether the explanation given is reasonable or not.

I am to add that the number of cases in which penalties are inflicted in India for offences under the Vaccination Acts are comparatively few. It may be inferred from this that the requirements of the law are enforced with moderation and restraint.

I am, Madam,
Your obedient servant,
A. GODLEY.

Mr. Tarachand's Views.

A copy of the foregoing correspondence was sent to Mr. K. J. Tarachand, B.A., of Bombay, the writer of the article on "The Failure of Vaccination in India," which appeared in *The Vaccination Inquirer*, April, 1909. Mr. Tarachand replied as follows :—

Pheroze Cottage,
7 Sleater Road, Grant Road,
Bombay, 14th August, 1909.

MY DEAR MISS LOAT,—

I am sincerely grateful to your Society for approaching Lord Morley. Your letter was everything that could be desired, and I have nothing to add to it. But I have some remarks to offer on the Indian Secretary's reply.

Seeing that a number of eminent medical men are of opinion that it is the vaccinated rather than the unvaccinated that are a real danger to the public, it is absurd to say that the public health would be seriously jeopardised by the withdrawal of the compulsory powers which are in force in this country.

The reply from the India Office states : "Vaccination is not made compulsory in any municipality except upon the application of the municipal body, in pursuance of a resolution passed by a majority of the members present at a special meeting, and after a sufficient time has been given to the inhabitants to show cause why the application should not be acted upon by the local government."

Now the municipal body means a few half-educated men who adopt whatever is the fashion in the west, seldom taking the trouble to think for themselves. The inhabitants are mostly an ignorant and enslaved lot, who dare not give utterance to their views and sentiments without incurring the displeasure of the authorities. Thus the whole procedure is a solemn farce, and the conclusion to which the India Office jumps, viz. : "compulsion where it is applied has therefore public opinion behind it," is entirely wrong and unsafe.

The employment of "natives of India and not paid servants of the Government" in enforcing compulsion does not make our lot any easier, for among us there are persons who are as anxious as the white people to gain the good graces of the Government by servilely carrying out its wishes.

Hoping some good may come out of your efforts,

Yours very sincerely,
K. J. TARACHAND.

[NOTE.—On the 3rd May, 1910, Miss Loat inquired from the Secretary of State for India in Council, whether any reply had been received from the Government of India on the subject of her letter of the 5th July, 1909. The answer was in the negative.

On the 28th May, 1910, Miss Loat wrote asking that the Government of India might be requested to give attention to her letter of the 5th July, 1909, and to send a reply at an early date. The

Secretary replied on the 8th June stating that "in view of the considerations conveyed in Sir Arthur Godley's letter of the 20th July, 1909, Lord Morley saw no necessity to address the Government of India again on the subject."]

THE FAILURE OF VACCINATION TO PROTECT ENGLISH SOLDIERS IN INDIA FROM SMALLPOX.

By Miss L. Loat.

[Reprinted from *The Vaccination Inquirer*, October, 1909.]

It is universally acknowledged that vaccination in the British Army is carried out in the most thorough and systematic manner possible. Every recruit promises to submit to vaccination before he is passed as a soldier. Not only are soldiers serving in England required to undergo vaccination as often as the commanding officers choose, but those serving on foreign stations are regularly examined and re-vaccinated whenever the medical officers think they need it. The following passage from the Army Medical Department Report for 1906 shows how thoroughly re-vaccination is carried out among the troops serving in India:—

> "In October of each year, all men (as well as women and children) are inspected, and their medical history sheets examined. Those who do not show either satisfactory marks, or records of vaccination, are re-vaccinated." (Page 203).

It is thus clear that none of the men, women, and children in India with the English Army can possibly escape vaccination and re-vaccination.

Now, all modern pro-vaccinist doctors are agreed that recent re-vaccination, carried out not more than seven years before exposure to smallpox, is the best "protection" from the disease. If a person is vaccinated with ordinary lymph and the vaccination is not successful, this is taken to mean that that person is immune from smallpox. In India, in the case of unsuccessful re-vaccinations, further attempts are made with lymph which is known to be active, so that there can be no question as to the thoroughness of the operation.

Bearing in mind these two facts (1) that all modern pro-vaccinist doctors agree that recent re-vaccination is the best "protection" against smallpox, and (2) that our Army in India is as thoroughly vaccinated as any body of people could possibly be, what ought we to find if the contention contained in (1) were true? Ought we to find a single case of smallpox among the troops? What are the facts? We find not only cases of smallpox, but deaths, and these number more per million strength of the troops than those occurring in England and Wales, or in the whole of the United Kingdom, in spite of the fact that the countries mentioned contain a large proportion of very young, very old, delicate, neglected, unvaccinated, unwashed, ill-fed, and crowded inhabitants, while the Army in India consists of picked men in the prime of life, who are properly cared for in every way.

I give below the number of cases and deaths from smallpox each year for a number of years occurring in the British Army in India, and I also give two other tables, one showing the number of cases and deaths from smallpox notified to the Local Government Board in England and Wales, with the populations amongst whom they occurred, since 1891 (the first year I have at hand), and the other showing the deaths from smallpox in the whole of the United Kingdom since 1890.

Cases and Deaths from Smallpox in the British Army in India.

Year.	Average strength.	Cases.	Deaths.
1890	67,456	36	4
1891	66,178	14	1
1892	68,045	18	3
1893	69,865	33	4
1894	70,983	13	3
1895	68,331	19	2
1896	70,484	122	10
1897	64,531	24	4
1898	65,397	2	0
1899	67,697	14	1
1900	60,553	36	3
1901	60,838	20	3
1902	60,540	23	4
1903	69,613	68	8
1904	70,413	49	5
1905	70,994	99	1
1906	70,193	87	4
1907	69,332	30	1
18 years	1,211,443	707	61

Smallpox attack-rate per million strength, 583.6.
Smallpox death rate per million strength, 50.3.

Number of Cases of Smallpox notified to the Local Government Board by certain Boroughs and Urban Districts in England and Wales, since 1891, with populations amongst whom they occurred.

Year.	Population of Towns notifying Cases.	Smallpox Cases.	Deaths.
1891	12,491,933	377	49
1892	12,852,060	2,864	287
1893	12,913,846	11,135	909
1894	13,235,596	6,534	529
1895	13,676,274	2,090	142
1896	15,446,680	2,820	484
1897	15,549,769	196	20
1898	15,569,617	1,597	219
1899	15,696,600	947	149
1900	15,787,963	540	61
1901	18,524,366	2,266	287
1902	19,043,130	13,976	2,062
1903	19,043,130	9,265	522
1904	19,397,920	5,945	329
1905	19,427,711	2,375	75
1906	19,437,867	1,011	16
1907	19,432,395	124	6
17 years	277,526,857	64,062	6,146

The smallpox attack-rate works out at 230.8, and the death-rate at 22.1 per million of the population.

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DEATHS FROM SMALLPOX IN THE UNITED KINGDOM, FROM THE 70TH REPORT OF THE REGISTRAR-GENERAL, 1890—1906. (The figures for 1907 are not yet available.)

Year.	Average population.	Smallpox deaths.
1890	37,484,764	16
1891	37,802,440	56
1892	38,134,110	442
1893	38,490,333	1,526
1894	38,859,067	1,021
1895	39,221,109	416
1896	39,599,072	547
1897	39,987,294	38
1898	40,380,792	255
1899	40,774,296	176
1900	41,154,646	139
1901	41,550,773	636
1902	41,961,199	2,545
1903	42,371,219	841
1904	42,793,272	708
1905	43,221,145	125
1906	43,661,092	22
17 years	687,446,623	9,509

The smallpox death-rate works out at 13.8 per million of the population.

From these figures it will be seen that the thoroughly vaccinated and re-vaccinated British Army in India furnishes more than twice as many smallpox cases and deaths per million strength than do the largest towns in England and Wales, although these towns include many containing a large proportion of unvaccinated persons, while the great majority of their inhabitants are entirely un-revaccinated. When compared with the whole of the United Kingdom, the British Army in India suffers between three and four times as much in smallpox deaths per million strength, in spite of the fact that the United Kingdom has a large proportion of unvaccinated and unre-vaccinated inhabitants.

Taking the reports separately, valuable evidence of the failure of re-vaccination to protect is continually given. In the report for 1906 we find the following: "Of the 87 cases which occurred in 1906, 71 were reported to have been successfully re-vaccinated."

In the report for 1903 (Children): "The child attacked with smallpox at Bombay was twice vaccinated, once in January, 1902, and a second time in October, 1902, but the result failed on both occasions." Here we have a child twice vaccinated in 1902 taking smallpox in 1903.

In the report for 1902: "Of the other two fatal cases, one occurred at Cawnpore in June (1902); the patient had been vaccinated on enlistment in 1892 and again in November, 1899, and bore successful marks of each operation; the remaining fatal case occurred at Meerut, in May; this patient had seven good marks of previous vaccinations, the last operation being done in 1898." "In most of these stations (previously named) records of satisfactory vaccination and re-vaccination are reported. In Lucknow one of the cases was re-vaccinated successfully in February, 1900."

From the same report (1902), Children:— "The child attacked with smallpox at Dinapore was vaccinated about February, 1901, and re-vaccinated on May 15th, 1902, when smallpox was prevalent among the civil population, and died on May 23rd, 1902."

From the report for 1901: "All bore satisfactory marks of vaccination, and one of the fatal cases had been re-vaccinated in four places only a few weeks before he contracted the disease." "All the men (at other stations) attacked bore vaccination marks, and in the Cawnpore case the man had been successfully re-vaccinated in December, 1899."

From the same report, page 205, dealing with separate districts: Jubbulpore.—"There were also three cases of smallpox, with two deaths; the disease was prevalent in the civil population. All these cases had been re-vaccinated."

From the report for 1897: "At Lucknow . . . the men attacked bore marks of satisfactory re-vaccination." "The men (at Sitapur) had been re-vaccinated within the last five years."

From the report for 1896: "All the men (in the Dorsetshire Regiment) bore marks of vaccination, and the disease, except in three men, ran a modified course. Of the two fatal cases, one was of the malignant and the other of the confluent type, both being very severe." "At Allahabad there were 16 admissions early in the year, the cause of the outbreak being probably direct contagion through natives, as the disease was epidemic at the station. All the men bore marks of previous vaccination. At Umballa there were nine admissions and two deaths; six of the cases bore marks of satisfactory vaccination, four having a modified form of the disease, the fifth a typical attack, and the sixth a confluent and fatal one. This last was re-vaccinated two days before admission. Three patients bore doubtful marks of vaccination, one had the modified type, one the confluent, and the other the malignant form, which proved fatal; this man had been twice unsuccessfully re-vaccinated. At Rawal Pindi . . . all the men (attacked by smallpox) had satisfactory marks of vaccination or re-vaccination." It was also stated that all the six cases at Meerut and five cases at Lucknow bore marks of vaccination. One was severe.

It is perfectly clear that when smallpox is epidemic at any of the stations where the soldiers are, some of these "protected" men are certain to take smallpox. That there should have been 707 cases, with 61 deaths, in the 18 years ending with 1907, among men who could not be better vaccinated, is proof of the fallacy of the contention that vaccination protects from smallpox or mitigates the disease.

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SMALLPOX IN THE BRITISH ARMY IN INDIA.

On the 20th September, 1909, in answer to Sir F. Channing, Mr. Haldane submitted a table to the British House of Commons showing the extent to which smallpox has prevailed amongst the troops serving in the United Kingdom, India, Egypt, and the Colonies, during the years 1888 to 1905, inclusive. The following is the portion of the table relating to the troops in India. The Strength of the troops has been added:—

Year.	Strength.	Admissions.	Deaths.	Percentage.		Percentage of Mortality to Attack.
				Admissions.	Deaths.	
1888	68,795	107	10	0.16	0.01	9.35
1889	68,545	152	17	0.22	0.02	11.18
1890	67,456	36	4	0.05	0.00	11.11
1891	66,178	14	1	0.02	0.00	7.14
1892	68,045	18	3	0.03	0.00	16.67
1893	69,865	33	4	0.05	0.01	12.12
1894	70,983	13	3	0.02	0.00	23.08
1895	68,331	19	2	0.03	0.00	10.53
1896	70,484	122	10	0.17	0.01	8.20
1897	64,531	24	4	0.04	0.01	16.67
1898	65,397	2	—	0.00	—	—
1899	67,697	14	1	0.02	0.00	7.14
1900	60,553	36	3	0.06	0.01	8.33
1901	60,838	20	3	0.03	0.01	15.00
1902	60,540	23	4	0.04	0.01	17.39
1903	69,613	68	8	0.10	0.01	11.76
1904	70,413	49	5	0.07	0.01	10.20
1905	70,994	99	1	0.14	0.00	1.01

The following are the figures for subsequent years, as given in the Annual Army Reports:—

1906	70,193	87	4	0.12	0.00	4.60
1907	69,332	30	1	0.04	0.00	3.33
1908	68,522	53	2	0.08	0.00	3.77
1909	71,556	19	1	0.03	0.00	5.26

The foregoing figures relate only to the cases occurring amongst the "men" in the British or white troops. They do not include cases amongst the officers, women, and children, or the cases amongst the native troops.

The following are particulars of the cases amongst officers, women, and children so far as they are given in the Army Medical Reports:—

Year.	Officers.			Women.			Children.		
	Strength.	Cases	Deaths.	Strength.	Cases	Deaths.	Strength.	Cases	Deaths.
1900	1780	6	1	2908	15	3	5376	7	2
1901	1799	4	0	2729	3	0	5069	12	2
1902	1931	3	0	2555	6	2	4709	3	1
1903	2165	4	0	2891	5	1	4677	3	1
1904	2290	1	0	3220	7	1	4964	7	0
1905	2314	2	0	3375	16	3	5154	9	4
1906	2225	4	0	3431	?	?	5322	5	?
1907	2204	1	0	3496	5	0	5379	3	?
1908	2160	8	0	3696	36	7	5819	8	1
1909	2296	2	0	3913	8	1	6201	6	0

Native Troops.—The article next following gives particulars of the cases and deaths which have occurred amongst native troops since the year 1900.

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MORTALITY FROM FEVERS AMONG THE TROOPS IN INDIA.

A Return [245, price ½d.] has recently, 1909, been presented to the House of Commons (at the request of Sir William Collins) "showing the cases of and deaths from Enteric Fever, Cholera, Plague, and Smallpox (with corresponding rates per thousand) in the Native Army and among European troops in India, respectively, for each year from 1900 to 1908, inclusive."

The following tables have been extracted from the Return :—

CASES OF AND DEATHS FROM SMALLPOX.

Years.	British Troops.				Native Troops.			
	Number of		Ratio per 1,000.		Number of		Ratio per 1,000.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths
1900	36	3	0.6	0.05	78	4	0.6	0.03
1901	20	3	0.3	0.05	55	4	0.5	0.03
1902	23	4	0.4	0.07	75	2	0.6	0.02
1903	68	8	1.0	0.11	78	2	0.6	0.02
1904	49	4	0.7	0.06	56	3	0.5	0.03
1905	99	1	1.4	0.01	77	1	0.6	0.01
1906	87	4	1.2	0.06	79	4	0.6	0.03
1907	30	1	0.4	0.01	47	5	0.4	0.04
1908	53	2	0.8	0.03	103	3	0.8	0.02
Total	465	30	0.8	0.05	648	28	0.6	0.02
	Fatality Rate — 6.4 per cent.				Fatality Rate — 4.3 per cent.			

SUMMARY OF THE CASES OF, AND DEATHS FROM, EACH OF THE DISEASES NAMED DURING THE NINE YEARS (1900-1908) COVERED BY THE RETURN.

Disease.	British Troops.			Native Troops.		
	Cases.	Deaths.	Fatality Rate.	Cases.	Deaths.	Fatality Rate.
Enteric Fever	9,689	2,132	22.0	1,061	273	25.8
Cholera	428	336	78.5	1,165	729	62.6
Plague	66	15	22.7	993	590	59.4
Smallpox	465	30	6.4	648	28	4.3
Total	10,648	2,513	23.6	3,867	1,620	41.9

During the years 1900-2 the strength of the British troops in India was, approximately, 60,000, and during the years 1903-8 it was, approximately, 70,000. The strength of the native troops was roughly double that of the British troops.

[In 1909 there were 19 smallpox cases and 1 death amongst the British troops and 43 smallpox cases and 8 deaths amongst the native troops.]

SMALLPOX AND VACCINATION IN BRITISH INDIA.

REVIEW OF MAJOR JAMES'S BOOK.

[Reprinted from *The Vaccination Inquirer for February*, 1910.]

"Smallpox and Vaccination in British India," is the title of a book recently published by Major G. P. James, M.D., Lond., D.P.H., Indian Medical Service, and Statistical Officer to the Government of India. "The British Medical Journal" says that it is "one of the most convincing arguments in favour of vaccination ever published."

After this testimonial our readers will not be surprised to learn that Dr. James quotes, with approval, the opinion of Immerman that the discovery of vaccination "is the greatest sanitary fact of all times."

The task Dr. James had before him was certainly formidable, viz.: to excuse the utter failure of vaccination to stop epidemic smallpox in India. Like most vaccine apologists, Dr. James gives himself away. It is not necessary to go outside the pages of his book to prove his prejudice, and to establish the fatuousness of his conclusions.

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For example, he admits that one of the greatest obstacles, if not the greatest obstacle, to the success of vaccination in India has been the practice of smallpox inoculation. He also supplies particulars which show that smallpox epidemics have only declined in proportion as the practice of inoculation has been suppressed, and then he has the hardihood to claim the decline as an evidence of the value of vaccination!

The Prevalence and Disastrous Results of Inoculation.

Chapter II. deals with smallpox inoculation. In commenting on the great antiquity of the practice, Major James distinguishes the provinces in which it has been most prevalent. These provinces are Bengal, Assam, Burma, the North West Frontier Province, and some of the Native States. In Bengal the practice was almost universal until the middle of the 19th century. Evidence collected by the smallpox Committee in 1850 showed that in consequence of the reckless way in which inoculation was then carried out, many deaths ensued from the operation itself, and epidemics of the disease were continually breaking out. In 1865 the practice was prohibited in certain districts, though the efforts to suppress it have been far from successful, and there are some areas, even in British territory, where inoculation is still carried on.

The Rise of Vaccination.

In Chapter III. Major James gives a brief history of vaccination in India from its introduction in 1802-3. He details the struggles of the Government to spread the operation, at first by voluntary means, and subsequently (in towns) by compulsion. "Bombay has the merit," he says, "of being the first town in India in which compulsory vaccination was introduced. This was in 1877. Kurrachee followed suit in 1879." In 1880 the Government of India passed an Act, authorising Municipal Commissioners to prohibit inoculation and to enforce the vaccination of children. Up to the year 1906 this Act had been adopted by 484 out of 719 Municipalities.

"The Proof of the Value of Vaccination in India."

Chapter IV. is the gem of the book—it is so thoroughly Jennerian. Smallpox has shown a tendency to decline of late years, *ergo*, great is Vaccination! In true pro-vaccinist fashion Major James first describes the ravages of smallpox before vaccination became general. He then displays a series of statistical charts, showing how the disease has declined since 1868 (the beginning of the statistical era), especially in those provinces where the vaccination arrangements have been most efficient, viz.: Bombay, the Central Provinces, the Punjab, the Madras Presidency, and Berar.* He also exhibits diagrams of the "awful example" tpye, showing how smallpox still persists in the provinces where vaccination has been most neglected, viz.: Bengal, Assam, and Lower Burma. The value of these various contentions will be examined later.

Charts Nos. XI. and XII. sum up the proof of "the wonderful merit of vaccination." Chart No. XI. shows the total number of vaccinations performed in British India annually from 1877 to 1907 (31 years). These figures (from 1878) may be roughly divided into three decennial periods as follows:—

	Annual Average No. of Vaccinations.	Annual Average Population.
1878–1887	5,000,000 ..	186,500,000
1888–1897	7,000,000 ..	206,000,000
1898–1907	8,500,000 ..	222,500,000

At the present time more than nine million vaccination operations are performed annually in British India.

A Striking Comparison.

A good idea of the enormous extent of the vaccination operations of the Government of India can be obtained by comparing them with those of the Public Vaccinators in England and Wales.

In England and Wales, during the year 1908, 446,110 vaccinations, at all ages, were carried out by the *public* Vaccinators in a population of 35,348,780, a ratio of 12.6 per 1,000. In India, during the year 1907-8, 9,169,873 vaccinations, at all ages, were carried out in a population of 236,563,889, a ratio of 36.07 per 1,000 of the population!

It is impossible to make an accurate comparison of the percentage of the *births* vaccinated. Complete returns are available for England and Wales, but not for India. Some interesting comparisons of the percentage of vaccinations to population, in England, India, and Japan, are, however, given in a table on page 49 of this publication.

The Decline of Smallpox.

Chart XII., which exhibits the decline in smallpox, may be put into statistical form as follows:—

Period.	Total Smallpox deaths.	Annual Average No. of deaths per million of population.
1868–1877	1,436,009	1032.3
1878–1887	1,460,890	771.9
1888–1897	961,424	466.0
1898–1907	832,165	373.9

A continuation of Chapter IV. shows how the number of serious epidemics has declined in the various provinces during the latter half of the period covered by the above table, as compared with the first half. Defining a smallpox epidemic to mean such a prevalence of the disease that the deaths from it constitute 5 or more per cent. of the total deaths, the statistics show:—

For the 20 years from 1868 to 1887, 9 epidemics
" 20 " " 1888 to 1907, 0 "

The closing sections of the chapter elaborate the conclusion that "vaccination is wholly to praise for the reduction in smallpox," that the decline "is dependent upon the amount and efficiency of vaccination," and "that except

* Major James estimates that if the recorded death-rate of smallpox in these provinces for 1868 to 1877 (viz., 1318.5 per million) had continued through the subsequent decades down to 1907, "the number of deaths from smallpox in this part of India during the forty years would have amounted to 6,235,802. Actually, however, they amounted to 3,777,967, and the difference, namely, 2,457.835 represents the number of lives *known* to have been saved by vaccination."

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vaccination there is no cause that will account satisfactorily for the facts." In support of the latter contention, Major James feebly rebuts the idea that the diminution has been the result of inoculation because "it has been very great in provinces where inoculation was never practised widely, if at all." He does not, however, offer any evidence in support of this statement. He also disputes the idea that the decline is due in any degree to improved sanitary conditions, and cites the increase of cholera since 1875 in proof of this contention. It is obvious, however, that as cholera is caused only by impure water supplies this comparison is altogether inadequate. A comparison with the zymotic class of diseases, as a whole, would alone give trustworthy results. It is significant that Major James does not attempt such a comparison, though doubtless he has all the necessary figures at his disposal.

The Real Causes of the Decline.

There can be little question that an impartial investigation of the facts of India's sanitary history would have shown that the recent decline of smallpox in India has been due to (*a*) the decline of inoculation, and (*b*) the increase of sanitary measures.

Out of the mass of evidence available in support of these conclusions, it will suffice here to quote the following:—

The provinces in which smallpox has declined least, viz., Bengal, Assam and Lower Burma, are the provinces which Major James himself names as being hotbeds of inoculation. The annual reports of the vaccination officials of these provinces also abound with references to the way in which their efforts to suppress smallpox are being thwarted by the preference of the natives for inoculation. It is obvious, therefore, that the measure of the success of the officials in suppressing inoculation must be in large part a measure of the decline of smallpox.

As regards the influence of sanitation—Major James has himself unwittingly noted the importance of sanitary education as a factor in the problem of smallpox reduction.

On page 29 he says: "in 1868 a new era in Indian sanitation was inaugurated by the appointment of provincial Sanitary Commissioners, and these officers eventually took charge of the vaccination work in all parts of India." A little further on he says (pp. 34-5): "by October, 1881, the amalgamation of the vaccination with the Sanitary Department had been carried out in all the provinces of India, and from that year steps were taken in several provinces to instruct the existing staff in simple hygiene, and to make future appointments as vaccinators dependent on the possession of an elementary knowledge of sanitation as well as of the art of vaccinating. Inspectors of vaccination became Deputy Sanitary Commissioners, and were called upon to attend to all sanitary matters, especially while on tour, instead of confining themselves, as formerly, to vaccination work."

In view of these developments, it is not a matter for surprise that the improvement in the smallpox mortality in India dates from about the year 1885, when the death rate fell to about 400 per million. The average annual mortality since that year has been about 350 per million. During the previous years, 1868-1884, the annual average had been about 940 per million.

Forty Years of Sanitary Measures.

In addition to the sanitary activities of the vaccinating officials, large sums of money have also been spent year by year by the Indian Sanitary Commissioners in the execution of sanitary works, improvement of water supplies, drainage, &c., &c., particulars of which will be found in the annual reports issued by them during the past forty years. Anti-vaccinists will remember how the Commissioners have from time to time frankly confessed the futility of relying upon vaccination as a means of eradicating smallpox. Some quotations from their reports to this effect are given by Sir William Collins and Mr. Picton in their Dissent from the Report of the Royal Commission on Vaccination (see Clause 227).

While it may be true that sanitation in India is still in its infancy,* it is absurd to suppose that the sanitary measures which have been put in force there during the past forty years have been powerless to affect the prevalence of smallpox.

The Boot on the Other Leg.

There is, however, ample ground for the belief that the "boot is on the other leg," and that the millions of vaccinations carried out yearly in India have been worse than useless. This conclusion is confirmed to the full by a Chart (No. 14) which Major James gives, showing the extent to which smallpox has prevailed during the past thirty-eight years in the European and Native Armies in India.

The following table gives a rough idea of the figures which form the basis of the Chart:—

EUROPEAN AND NATIVE ARMIES IN INDIA—ATTACKS OF SMALLPOX PER 10,000 OF STRENGTH.

Period.	Native Army. Annual Average.	European Army. Average.
1870–4	13.2	7.4
1875–9	14.4	6.0
1880–4	13.6	8.8
1885–9	8.2	9.8
1890–4	5.4	3.4
1895–9	5.4	5.2
1900–4	5.4	6.0
1905–7 (3 years) ..	5.3	10.0

The figures are summarized by Major James as follows:—

	Strength on which the rates are worked.	Actual No. of attacks of smallpox during the 38 years	Attack rate per 10,000 for the period.
European Army ..	2,408,019	1,713	7.1
Native Army	4,071,061	3,479	8.5

* Major James says in his preface that Orientals "generally live amid surroundings which could not be more favourable to the spread of epidemic disease if they had been specially devised to that end."

The actual number of deaths during the period 1870-1907 was 175 among European troops, and 280 among Native troops, these figures giving fatality-rates of 10.2 and 8.0 per cent. respectively.

Major James comments upon the circumstance that of late years the attack rate among the European troops has been higher than that amongst the Native troops, whereas formerly the position was reversed. (See the first table given above.) He says: "there is no explanation which will account satisfactorily for this unexpected and very interesting change, except the explanation that since 1885 vaccination and re-vaccination have been less carefully attended to among European than among Native troops."

It would be difficult to find a better illustration of Cobbett's famous dictum that quackery is never without a shuffle. When smallpox declines it is a proof, to Major James, of the efficiency of the vaccination measures, when it shows a tendency to increase, it is *ipso facto* a proof that the vaccination measures were not effective. What could be simpler.

So far as the Native troops are concerned, there can be little question that the greater immunity from smallpox which they now enjoy is due to the greater sanitary care bestowed upon them. This is proved by the much more striking decline in the general death rate of the Native Army which has taken place during the period in question. Here are the figures for the past few years :—

NATIVE ARMY—INDIA.

Mortality per 1,000 of Average Strength.

1900	14.04	1904	8.46
1901	10.68	1905	8.09
1902	11.16	1906	6.57
1903	10.04	1907	6.27

It is more than likely also that the Native troops, when properly cared for, have a greater natural resistance to smallpox than is enjoyed by European troops suddenly transferred to what must be to them abnormal climatic conditions.

Major James attempts, however, to justify his conclusion by producing figures to show that the vaccination work amongst European troops recently sent to India has revealed many cases showing unsatisfactory "marks." He cannot surely be aware that the "marks" theory has been reduced to an absurdity by Dr. Copeman's expert opinion that large marks are not necessarily an evidence of "efficient" vaccination.

In his attempts to explain away the extent of smallpox occurring amongst the troops in India, Major James compares the men's figures with those of the wives of the European soldiers in India. "Whatever may be the condition in regard to primary vaccination in infancy, successful re-vaccination of these women," says Major James, "is rare." He also adds :—

"The conditions of life of these women keep them well protected from attacks of infectious disease, and as a consequence they suffer from cholera and enteric fever to a much smaller extent than the soldiers. We should expect also that they would suffer much less from smallpox, especially if, as some people think, a more sanitary condition of living is the chief cause of a lessened incidence of that disease. But it will be seen from the table in the margin that it is an invariable rule for the incidence of smallpox among the women to be much higher than among the men. It can be accounted for only by our knowledge that the women, owing to the infrequency of successful re-vaccination among them, are much less protected from smallpox than are the men."

Here is the table referred to :—

RELATIVE INCIDENCE OF SMALLPOX AMONG MEN AND WOMEN OF THE EUROPEAN ARMY OF INDIA.

Admission rates per 10,000 of strength.

	Men.	Women.
1898	.0 ..	13.0
1899	2.0 ..	26.0
1900	6.0 ..	52.0
1901	3.0 ..	11.0
1902	4.0 ..	23.0
1903	10.0 ..	17.0
1904	7.0 ..	22.0
1905	14.0 ..	47.0
1906	12.0 ..	38.0
1907	4.0 ..	14.0
1908	8.0 ..	97.0

It is difficult to acquit Major James of deliberate misrepresentation when he states that the women of the European Army in India "are less well protected from smallpox than are the men." He must be well aware that the vaccination of these women is as carefully attended to as that of the men. In October of each year all men in the Indian Army, and all the women and children connected with them, are inspected and their medical sheets examined, and those who do not show either satisfactory marks or records of vaccination are re-vaccinated. Ample proof of the absolute equality of treatment of the men and the women can be obtained from the Army Medical Reports. For example, in the report for 1903 particulars are given of a number of cases of smallpox which occurred amongst the troops at Lucknow, and it is stated that "all men, women and children were carefully examined, and those not bearing satisfactory marks of vaccination were re-vaccinated. Later on, as the disease appeared to have got a firm hold on the troops, it was decided to re-vaccinate every one, irrespective of marks, in the garrison, with the result that 2,391 men, 29 women, and 89 children were either vaccinated or re-vaccinated during the year."

No doubt one explanation of the severer incidence of smallpox amongst the women lies in the fact that they probably mix more frequently amongst the civil population in the bazaars, &c., than the men. It is also to be remembered that the vast majority of the men are young unmarried men, whose general conditions of living are under closer medical and regimental supervision than probably prevails in the case of the women? We merely hazard these explanations in the hope that some of our Indian friends on the spot, or some military sympathisers who have served with the forces in India, may be able to throw further light on the matter. We shall be glad to hear from anyone who can do so.

The Mitigation Theory.

Major James ekes out his apology for the failure of vaccination in India with the usual

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assumption that vaccination has at least mitigated the severity of the attacks amongst the vaccinated. In support of this contention he quotes the following figures relating to the civil population of India for all ages :—

	No.	Deaths.	Case-Mortality per cent.
Vaccinated people attacked by smallpox	1,118	97	8.6
Unvaccinated people attacked by smallpox	1,177	610	51.8

and also the following figures showing the case-mortality in the Army for the last thirty-seven years :—

	Total Cases.	Total Deaths.	Case-Mortality per cent.
European Troops ..	1,691	170	10.1
Native Troops.. ..	3,420	263	7.7

We need not take up any space in exposing the farcical character of the Major's unvaccinated fatality rate. It is too absurd for argument. We are surprised to note, however, that he does not think it necessary to explain why the vaccination has "mitigated" the Native deaths to a greater extent than the European deaths, or why the vaccinated civil population should enjoy a lower case-mortality than the vaccinated and re-vaccinated picked young men of the European troops. These differences obviously reduce the mitigation theory to an absurdity. He evidently thinks, however, that the severity of the case-mortality of the troops requires some white-washing, and adds the following comments to the figures quoted above :—

"We are aware that during the earlier years of this somewhat long period the prevention of disease among soldiers in India had not attained to such a high degree of perfection as at present, and doubtless less care was exercised to ensure the successful vaccination of every soldier. This is evidenced by the fact that if we consider the figures of the last ten years we find that among European troops there were only 29 deaths among 428 cases of smallpox—a fatality of 6.3 per cent.—(among European soldiers' wives, who, as we have seen, are rarely re-vaccinated, the fatality during the same period was 15.7 per cent.)—and among native troops only 28 deaths among 618 cases—a fatality of 4.2 per cent. It must surely be a wonderful measure that in the adverse conditions of India can convert such a dreadful disease as smallpox into one that is, comparatively speaking, so seldom fatal."

"A Wonderful Measure."

The wonderful effect of vaccination in mitigating smallpox in the Indian Army may be contrasted with the even more wonderful effect of non-vaccination in achieving the like result in Leicester. During the period of thirty years—1878-1907—a total of 1,211 cases of smallpox occurred in Leicester with 62 deaths, or a case-mortality of only 5.1 per cent. If we take the figures for the past ten years, in which vaccination has been almost universally abandoned, there were only 30 deaths among 755 cases—a fatality of only 4.0 per cent. !

Change in the Age Incidence.

The last argument adduced by Major James in defence of "the value of vaccination" is the change in the age incidence of smallpox mortality, "where vaccination of infants and children has been widely employed." He confesses that he cannot quote many statistics illustrating this change in India, but says that "Dr. Leith's admirable mortuary reports of the city of Bombay from 1848 to 1859, however, enable the following example to be given :—

CHANGE IN THE AGE-INCIDENCE OF DEATHS FROM SMALLPOX IN BOMBAY.

Deaths from smallpox at certain age periods to deaths from smallpox at all ages.

Years.	0–6 per cent.	2–6 per cent.	2–13 per cent.	20 and upwards per cent.
1848–1852 ..	79	41	50	6
1896–1900 ..	56	12	19	24

Major James adds :—

"I should be going beyond the limit that I have laid down for myself in regard to this section if I were to detail the very simple explanation of these changes in the age incidence of smallpox. It must suffice to say that no cause except vaccination has been, or can be, suggested which is adequate to explain them."

The latter conclusion is characteristic of the whole book. It is replete with just such unblushing assumptions. Had Major James been disposed to study the question in an impartial way, he would have found ample evidence in the Dissent Report of Messrs. Collins and Picton to prove the utter worthlessness of his *ex parte* contentions.

We may add, in concluding this brief review, that the book is well-nigh as much open to reprobation for its omissions as for its biassed contentions. For example, no recent statistics are given in regard to the several large towns of India where compulsory vaccination has been in force for many years, and smallpox hospitals established. Not a word is said as to what extent hospital isolation is adopted, or as to whether smallpox occurs frequently or otherwise after inoculation or after smallpox, though ample opportunity must be afforded of obtaining information on the latter points in places where inoculation still prevails and where smallpox is common. It is possibly hopeless to expect Major James, or any other pro-vaccinator, to collect this information, as it is not likely to be of a kind calculated to preserve vaccination from ridicule. Major James does, however, assert (p. 92) that the value of vaccination has been extensively tested in India by subsequent attempts to inoculate smallpox. and adds that this was done as early as 1803. He does not say whether any such tests have been made recently. If they have been it would be interesting to know why Major James does not publish the results.

The Lymph Question.

Major James states that bovine lymph has now largely taken the place of humanised lymph in all provinces, and that "in 1899-1900 the use of humanised lymph, in addition to bovine lymph, was resorted to only in the Punjab, the Central Provinces, Burma, and the United Provinces." He also adds that "in 1906-7 each

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province, except the Central Provinces, the North-West Frontier Province, Ajmer-Merwara and Coorg, maintained a central vaccine depôt for the manufacture of animal vaccine, and each Presidency town possessed a separate depôt from which all the lymph required in the town was supplied."

He observes an eloquent silence, however, as to the sources of the strains of lymph which are used at these vaccine depots. Are we to conclude that smallpox virus is in common use for this purpose ?

We have not space now to deal further with the numberless fallacies that are crowded into the pages of this book. Major James seems to have assumed that the prestige of his profession, and the authority of his official position, will suffice to obtain ready acceptance of his arguments, otherwise it is difficult to imagine how he could presume to write such a book after so slight an investigation of the subject as his handling of it reveals, and with so little attempt at a scientific presentation of the facts.

It is safe to say from the particulars of our cause in India, which we give in another column, that Indian anti-vaccinists will not experience much difficulty in exposing "the fallacies, the falsehoods, the fads and the follies," of this latest defence of the State-established and State-endowed interests of the vaccine traders.

[The following more detailed review of Major James's book subsequently appeared in the issues of *The Vaccination Inquirer* for December, 1910, and January and February, 1911].

IN *The Vaccination Inquirer* for February last (p. 229) we briefly reviewed Major S. P. James's book on "Smallpox and Vaccination in British India." Towards the end of that review we commented upon a number of important aspects of the problem with which Major James had omitted to deal. We were especially impressed by the absence of any statistical information as to the extent to which vaccination was being carried out in the alleged "well-vaccinated" provinces, as compared with the alleged badly-vaccinated provinces. We suspected that Major James had weighty reasons, as a pro-vaccinist apologist, for the suppression of this and other important information, and as opportunity has offered, we have been investigating the matter during the past six months. Our investigation has involved an extensive examination of numerous Indian official reports. Those who are familiar with the chaotic contents and heterogenous statistical tables of these reports, will understand how laborious has been the task of attempting to extract useful information from documents which could not more effectively conceal the truth had they been specially designed to achieve that end. We have, however, succeeded in discovering ample confirmation of our first suspicions and much other interesting information, to which we now direct the attention of our readers.

The Extent of Indian Vaccination.

A few preliminary remarks will be appropriate as to the extent of the vaccination operations carried on in India by the 6,700 vaccinators who are engaged in the work. During the five years, 1903—1907, the average number of births registered annually was (in round figures) 8,700,000. In the same period the average number of vaccinations per annum, at various ages, was as follows :—

Under 1 year	4,000,000
1 to 6 years	3,300,000
Above 6 years	1,000,000
Total	8,300,000

When it is remembered that about 22 per cent. of the children born in India die before they reach the age of 1 year, and another 18 per cent. before they reach the age of five, it will be at once apparent, from the above figures, that few, if any, children are likely to survive to the age of five without being vaccinated.

India compared with England.

But perhaps the most effective way of depicting the vast extent of the blood-poisoning industry in India is to compare it with the English experience, as follows :—

AVERAGE ANNUAL NUMBER OF VACCINATIONS AND RE-VACCINATIONS PER 1,000 OF POPULATION

	India.	England and Wales.
1878—1887	27.0	30.0
1888—1897	34.0	23.0
1898—1907	38.0	25.0
Average	33.0	26.0

A simple calculation shows that the Indian average during these thirty years is nearly 27 per cent. greater than that for England and Wales. One would naturally expect, therefore, that, if vaccination is the sole barrier against smallpox (as is foolishly alleged by Jennerian apologists) England would have suffered in a much greater degree from smallpox during the years in question than India. The following figures tell a very different tale :—

AVERAGE ANNUAL NUMBER OF SMALLPOX DEATHS PER 1,000,000 OF POPULATION

	India.	England and Wales.
1878—1887	771.9	54.0
1888—1897	466.0	15.6
1898—1907	373.9	14.3
Average	537.0	28.0

It is possible that some of our readers may consider that this comparison of India with England is not reasonable, in view of the vast difference that exists in the respective sanitary and economic positions of the two nations. As such a criticism gives up the case for vaccination, as the prime preventive of smallpox, we readily accept it.

India compared with India.

It is a simple matter, however, to demonstrate the futility of vaccination, by comparing India with India. For this purpose attention may be first drawn to the following striking table of

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figures, the first two columns of which are taken from Major James's book (p. 76). The third column has been arrived at by a simple calculation of the difference between the first two columns :—

BRITISH INDIA.

AVERAGE ANNUAL SMALLPOX DEATH-RATE PER MILLION OF POPULATION.

Period	In British India as a whole.	In "Well-Vaccinated British India."	In Badly Vaccinated British India.
1868—1877	1032.3	1318.5	310.4
1878—1887	771.9	1073.1	300.0
1888—1897	466.0	596.1	264.0
1898—1907	373.9	361.5	392.5
Average	661.0	837.0	317.0

A few words of explanation are necessary to bring out the full significance of this table. The second column consists of the total figures for the following provinces :—(1) Bombay, (2) United Provinces of Agra and Oudh, (3) The Central Provinces, (4) The Punjab, (5) The Madras Presidency, and (6) Berar. These are the provinces selected by Major James as being "well-vaccinated." His book contains a chart showing the decline of smallpox in each of these provinces, and also a chart (No. VII.) in which the combined experience of these six provinces is displayed. Writing of the latter chart, Major James says it "is self-explanatory of the remarkable benefits which the people of this vast area have derived from vaccination."

On pp. 76-7 of his book Major James sets out a similar table and chart showing the figures for "British India as a whole."

We scarcely think that he can have taken the trouble to place his tables side by side, otherwise he would have noticed that the death-rates per million in "well-vaccinated British India" were greater in all the decades (except the last one) than those in British India as a whole! A result which, of course, reduces Major James's special pleading for vaccination to so much nonsense. Worse still, he cannot surely have taken the obvious course of comparing the figures for the "well-vaccinated" provinces with those for the remaining "badly-vaccinated" provinces (as we have done in the third column of the tables set out above), otherwise he would have been confronted with the extraordinary fact that the badly-vaccinated provinces had suffered 100 per cent. less than "British India as a whole," and 160 per cent. less than "well-vaccinated British India." We venture to think that this is one of the most extraordinary proofs of the "remarkable benefits" of vaccination to be found in the whole range of pro-vaccinist literature.

There is one circumstance, however, that seems to indicate that Major James was well aware that the smallpox rates for his badly-vaccinated provinces compared very favourably with those for the well-vaccinated provinces. When illustrating the benefits of vaccination in the case of the latter provinces, Major James selected the figures for the whole of each province, but in the case of the badly-vaccinated provinces he has not done this, but has taken the figures for the towns only instead. Why? Was it because the figures for the towns make a blacker picture? This is shown by the following table. the column numbered (1) gives the figures for each province as a whole (*i.e.*, the figures which Major James ought to have used, had he desired to make a fair comparison), and column (2) those for the towns only. The latter have been extracted from Major James's charts. The figures for the well-vaccinated provinces are added for the purposes of comparison.

Period.	Badly-Vaccinated Provinces.						Well-Vaccinated Provinces. Combined total.
	Bengal.		Assam.		Lower Burma.		
	(1) Province.	(2) Towns.	(1) Province.	(2) Towns.	(1) Province.	(2) Towns.	
1878—1887	226.6	646.0	587.6	848.0	617.3	1546.0	1073.1
1888—1897	192.8	378.0	627.2	957.0	476.0	638.0	596.1
1898—1907	378.0 (a)	876.0 (a)	560.0 (a)	269.0 (a)	696.5	1077.0	361.5
Average	253.0	606.0	595.0	738.0	596.0	1087.0	677.0

(a) 1898—1904.

These figures show plainly why Major James selected the mortality of the towns in the badly-vaccinated provinces, instead of that of the provinces as a whole. Had he made a fair comparison, it would have brought to light the extraordinary fact that in all the three badly-vaccinated provinces the thirty years average for each province as a whole is less than that of the similar average for the combined well-vaccinated provinces. Hence the Major's unsportsmanlike tactics.

It is true that the well-vaccinated provinces show a uniform decline throughout the three decades. That is doubtless accounted for by the fact that in those provinces there has been little smallpox inoculation, and that that little has been suppressed; while in the three "badly-vaccinated" provinces there has been much smallpox inoculation, and it is still common in the outlying districts of those provinces, despite the efforts of the Government to suppress it. Nevertheless the figures show that in spite of the prevalence of inoculation, and the neglect of vaccination, these three provinces have a lower smallpox record than the well-vaccinated provinces.

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Major James suppresses Vaccination Statistics. Why ?

If there is one aspect of Major James's book more reprehensible than his handling of the smallpox figures for his badly-vaccinated provinces, it is his suppression of the vaccination statistics in respect of the various provinces. Had there been any real justification in his contention that smallpox had declined in the well-vaccinated provinces because they were well-vaccinated, one would have expected that Major James would have attempted to prove this by comparing the vaccination figures for the individual provinces, for the purpose of showing that the best vaccinated provinces in the group had suffered least from smallpox. The significance of his failure to do this will be apparent from a consideration of the following table which shows that nothing of the kind has occurred. Col. (1) gives the annual average smallpox mortality per million of population during the thirty years 1878—1907; and Col. (2) gives the annual average ratio of successful vaccinations, at the Special Vaccination Establishments, per 1,000 of the population, as recorded in the official Vaccination Reports.

Major James's Well-Vaccinated Provinces.

	(1)	(2)
Bombay	250.0	29.0
Berar (1878—1902)	319.0	34.0
Central Provinces .. .. (and Berar from 1903)	640.0	36.6
Punjab	690.0	32.0
United Provinces	792.0	23.0
Madras	806.0	26.5
Average	583.0	30.2

A little study of these figures suffices to show that Major James's suggested relationship between much vaccination and little smallpox has no real existence. The association of heavy smallpox mortality and a low percentage of vaccination work in the United Provinces and Madras, is altogether discounted by the association of the lowest smallpox rate of all with a low percentage of vaccination work in Bombay.

The following similar figures for the "badly-vaccinated" provinces are even more significant :

Major James's Badly-Vaccinated Provinces.

	(1)	(2)
Bengal	265.0	30.5
Assam and E. Bengal ..	558.0	37.0
Lower Burma	596.0	28.0
Average	473.0	31.8

These figures show that the alleged badly-vaccinated provinces are really better vaccinated on the whole than Major James's well-vaccinated provinces, and that they have suffered, on an average of 30 years, in a less degree from smallpox. At first sight it might be imagined that this was a point in favour of vaccination. A comparison of the figures by decades shows, however, that the smallpox death-rates have increased with the increase of vaccination, as follows :—

	Bengal.		Assam and East Bengal.		Lower Burma.	
	(1)	(2)	(1)	(2)	(1)	(2)
1878—87	226.6	30.5	587.6	—	617.3	13.7
1888—97	192.8	27.6	627.2	32.8	476.0	32.3
1898—07	375.5	33.3	460.5	40.8	696.5	37.4

It only remains to complete this *reductio ad absurdum* with the following comparison of the figures for the three small provinces of Coorg, Ajmer Merwara and the North West Frontier Province. A special significance attaches to the smallpox figures for these provinces, because of the fact that Major James did not deem it advisable to quote them in his book. He says that the "statistics are available for a period too short to make it worth while dealing with them separately." (p. 74). We venture to think our readers will agree on a perusal of such figures as are available that Major James was probably assisted in his decision to suppress the figures by the fact that they completely nullify his arguments in defence of vaccination,

Major James's Omitted Provinces.

	Period.	(1)	(2)
N.W. Frontier	1901—1907	629.2	28.3
Coorg	1879—1907	931.0	44.0
Ajmer Merwara	1894—1907	1,377.0	37.0
Average		979.0	36.4

Placing the averages of the three tables of figures for the three classes of provinces in one table, together with the similar figures for the whole of India and for England and Wales, we get the following staggering result :—

Provinces	(1)	(2)
Well-Vaccinated	583.0	30.2
Badly-Vaccinated	473.0	31.8
Omitted	979.0	36.4
**British India .. ..

Province.	(1)	(2)	(3)
Lower Burma	748	134.3	31.77
Upper Burma	550	190.0	
Bombay	2,526	136.7	29.03
Coorg	38	211.1	50.68
Assam & East Bengal	9,373	314.5	45.24
N.W. Frontier	734	386.3	41.86
Madras	22,204	604.3	39.19
Bengal	35,966	711.8	39.28
Central Provinces and Berar	9,044	753.6	43.84
United Provinces ..	59,996	1257.7	28.30
Punjab	28,652	1425.0	28.32
Ajmer-Merwara ..	863	1811.3	26.13
British India ..	170,694	754.0	35.93
England and Wales .	12	.34	18.0

The classification of these figures into Major James's "well-vaccinated," "badly-vaccinated" and "omitted" provinces brings to light the following astonishing evidence of "the wonderful merit of vaccination in India":—

Provinces.	(1)	(2)	(3)
Well-Vaccinated Provinces (Pop. 137,500,000).			
Bombay	2,526	136.7	29.03
Madras	22,204	604.3	39.19
Central Provinces and Berar	9.044	753.6	43.84
United Provinces ..	59,996	1257.7	28.30
Punjab	28,652	1425.0	29.32
Total	122,422	890.0	34.00
Badly-Vaccinated Provinces (Pop. 90,500,000).			
Lower Burma	748	134.3	31.77
Upper Burma	550	190.0	
Assam & East Bengal	9,373	314.5	45.24
Bengal	35,966	711.8	39.28
Total	46,637	515.0	39.00
Omitted Provinces (Pop. 2,800,000).			
Coorg	38	211.1	50.68
N.W. Frontier	734	386.3	41.86
Ajmer-Merwara ..	863	1811.3	26.13
Total	1,635	584.0	39.60

The Age-incidence Argument Exploded.

The futility of vaccination in India is further illustrated by the enormous death-rate amongst children. The official figures show that on the average 70 per cent. of the total deaths from smallpox take place amongst children under 10, and this despite the fact that 88 per cent. of the total vaccinations are performed upon children under six years of age.

As might be expected from the backward sanitary and economic condition of India, the general mortality of child-life is also very much greater than in the case of the adults. The reports show that the deaths of children under 10 from all causes are rather more than 50 per cent. of the total deaths at all ages. The following comparison of this and other figures, with like figures for England, tells its own story :—

AVERAGE ANNUAL DEATH-RATES DURING THE YEARS 1903-7.

	India.	England and Wales.
All Causes	35.0	15.4
Infantile Death-rate (per 1,000 births)	218.0	131.0
Per cent. of deaths (all causes) under 10 to deaths at all ages	50.7	36.3

"Millions Saved by Vaccination."

Major James attempts (p. 66) to calculate the millions of lives "known to have been saved by vaccination" in the well-vaccinated areas of British India. He does this by assuming that the whole of the reduction in smallpox since the years 1868-1877 may be credited to the vaccination operations of the Government. The fact is, of course, that that reduction is easily accounted for by the abandonment of inoculation. If there were any truth in Major James's egregious calculation we should expect to find that the best-vaccinated provinces would show the greatest diminution in smallpox. We have already proved that nothing of the kind has occurred. We should also expect to find that evidence of the "millions of lives" saved by vaccination would be provided by a reduction in the general death-rate. So far from this being the case the official reports show that the increasing vaccination activities of the Government have been accompanied by an extraordinary increase in the general death-rate. Here are some figures as given in Part V. "Statistics of British India for 1907-8 and preceding years" (p. 1). The figures for England and Wales are added for convenience of comparison :—

GENERAL DEATH-RATE.

Year.	India.	England and Wales.
1880	21.15	19.5
1885	26.37	18.7
1890	30.12	19.3
1895	28.94	18.5
1900	38.91	18.2
1905	36.14	15.2
1906	34.73	15.4
1907	37.18	15.0
1908	38.21	14.7

No doubt some part of this extraordinary increase in the general death-rate in India is more apparent than real, being due to the more perfect registration of deaths, and to the inclusion in the registration areas in the later years of less developed portions of the various provinces. But no one will, surely, contend that these factors account for the whole of the increase. In any case the figures prove conclusively that it is absurd for Major James to assume that the decline in smallpox deaths represents a real decline in general mortality. At the best all that has happened has been the transfer of the deaths from one type of zymotic disease to others. This view of the matter receives confirmation from the following table showing the death-rates from the principal diseases during certain periods :—

NATIONAL ANTI-VACCINATION LEAGUE INDIA

BRITISH INDIA.

AVERAGE ANNUAL RATIO OF DEATHS PER 1,000 OF POPULATION FROM THE PRINCIPAL DISEASES.

Diseases	2 years. 1883-4	10 years. 1898-1907.	1 year. 1908
Fevers	15.62	19.44	23.96
Plague	?	2.23	.50
Cholera	1.33	1.66	2.61
Dysentery and Diarrhœa	1.35	1.28	1.26
Respiratory Diseases	?	.85	1.01
Injuries	?	.44	.44
Smallpox	1.40	.37	.75
Other causes ..	?	7.35	7.68
All causes.. ..	24.82	33.62	38.21

Millions lost by Vaccination.

This table further shows that the transfer of the deaths from smallpox to other causes has been effected with a loss instead of a saving in the general mortality, the years of the heaviest smallpox mortality (1883-4) being years of low general mortality. In fact, these figures amply justify the belief that the wholesale blood-poisoning of the Indian people by vaccination (which, be it remembered, has been until recently all of the arm-to-arm description, and is still very largely so) has been responsible for the loss of millions of lives, directly, in consequence of immediate deaths from the effects of the operation, and, indirectly, in consequence of the diminution of the already too feeble disease-resisting powers of India's ill-fed, ill-clad and ill-housed millions.

The figures provide a startling confirmation of Herbert Spencer's *a priori* deduction :—

" It is held," said Herbert Spencer, " that the immunity produced by vaccination implies some change in the components of the body, a necessary assumption. But now if the substances composing the body, solid or liquid or both, have been so modified as to leave them no longer liable to smallpox, is the modification otherwise inoperative ? Will anyone dare to say it produces no further effect than that of shielding the patient from a particular disease ? You cannot change the constitution in relation to one invading agent and leave it unchanged in regard to all other invading agents. What must the change be ? There are cases of unhealthy persons in whom a serious disease, as typhoid fever, is followed by improved health. But these are not normal cases : if they were, a healthy person would become more healthy by having a succession of diseases. Hence, as a constitution modified by vaccination is not made more able to resist perturbing influences in general, it must be made less able. Heat and cold and wet and atmospheric changes tend ever to disturb the balance, as do also various foods, excessive exertion, mental strain. We have no means of measuring alterations in resisting power, and hence they commonly pass unremarked. There are, however, evidences of a general relative debility. Measles is a severer disease than it used to be, and deaths from it are very numerous. Influenza yields proof. Sixty years ago, when at long intervals an epidemic occurred, it seized but few, was not severe, and left no serious *sequelæ* : now it is permanently established, affects multitudes in extreme forms, and often leaves damaged constitutions. The disease is the same, but there is less ability to withstand it."—(" Facts and Comments.")

The figures also confirm the authoritative opinion of Dr. Farr that " healthy sanitary condition as to food, drink, and cleanliness of person, house and city stands first in importance ; after it, but subordinately, come quarantine vaccination, and other preventives, as means of subduing mortality ; for the mere exclusion of one out of many diseases appears to be taken advantage of by those other diseases, just as the extirpation of one weed makes way for other kinds of weeds in a foul garden " (Supplement, 35th Annual Report of the Registrar-General, p. xii. 1874).

BENGAL.

(Population in 1901, 74,428,183).*

The foregoing portion of this article deals with the experience of British India generally. It is proposed in what follows to deal more particularly with the experience of the three great provinces of India, and their capital cities, as recorded in the official Sanitary and Vaccination reports.

THE experience of the premier province is specially instructive. Major James says, " the history of the vicissitudes attending the various attempts to confer the benefits of vaccination upon the inhabitants of Bengal is a record of continual failure." A statement which stands in strange contrast to two facts revealed by the official reports, viz., (1) that during the 30 years, 1878-1907 the ratio of vaccinations per 1,000 of population was 30.5 as compared with 29.0 for British India as a whole, and (2) that during the same period the average annual smallpox death-rate per million of population was only 265, the lowest rate being 250 in the Bombay presidency, and the rate for India as a whole being 537.

The explanation of Major James's attempt to paint Bengal as badly vaccinated is to be found in the extraordinary increase which has taken place in the smallpox mortality of the province during the past few years, in which period also there has been the greatest amount of vaccination. Here are the figures which show in Col. (1) the annual average smallpox mortality per million of population, and in Col. (2) the annual average ratio of successful vaccinations at the Special Vaccination Establishments, per 1,000 of the population :—

	(1)	(2)
1878—1887	226.6	30.5
1888—1897	192.8	27.6
1898—1907	375.5	33.3
1908	711.8	39.28
1909	764.5	40.30

The rate of 764.5 per million for 1909 represents 38,609 deaths. With the exception of the year 1902, when the death-rate reached 771.6 per million (representing 57,430 deaths) the rate for 1909 is the heaviest rate recorded at least since the year 1875.

* NOTE.—After the partition of Bengal in 1904, the population was 49,891,164.

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What is the cause of the recent increase of Smallpox in Bengal?

We have endeavoured without success to ascertain whether any information is supplied in the official reports as to the real cause or causes of the great increase of smallpox in Bengal during recent years. It has been accompanied by a great increase of plague, cholera and fever during the same years, and has probably been caused by the same influences which have led to this great increase in the zymotic class of diseases generally. Some idea of the extent of the increase in these diseases may be gained from the following table :—

ANNUAL AVERAGE MORTALITY FROM PRINCIPAL DISEASES PER 1,000 OF POPULATION.

	5 years. 1898-02	5 years. 1903-07	1908
Fever	22.28	22.21	23.44
Cholera	2.15	3.11	5.32
Dysentery and Diarrhœa ..	.71	.93	1.28
Plague	.42	1.45	.31
Smallpox ..	.39	.37	.71
All causes ..	30.92	35.53	38.56

This table well illustrates the folly of the Indian "Sanitary" officials in regarding smallpox merely from the point of view of vaccination.

The following extracts from the Sanitary Commissioner's reports in regard to the great increase of cholera may be quoted as also affording some explanation of the parallel increase of smallpox :—

1907 REPORT.—"The mortality from this cause (cholera) was unusually heavy in 1906, but during the year under review (1907) it was heavier still. In fact this was the blackest year on record except 1900, when the loss of life from this disease was the heaviest ever recorded. Altogether there were 205,702 deaths during 1907, against 192,596 during the preceding year, and 138,999, the average of the five years 1902—06, the corresponding ratios being 4.07, 3.81 and 2.75 per mille respectively. The increasing pollution of the water-supply, and the use of unwholesome things by the poorer classes in consequence of the abnormal rise in the price of food-stuffs, seems to have played an important part in bringing about the unsatisfactory result noticed above."

1908 REPORT.—"There was a serious rise of mortality from this cause (cholera) during the year under report, so much so that it has been the highest ever recorded. The total number of deaths registered from this disease amounted to 268,908 as compared with 205,702 during 1907 and 157,413, the average of the five years 1903—1907, the respective ratios being 5.32, 4.07 and 3.11 per mille. Thus there were 63,206 more deaths during the year under report than in 1907. As explained in last year's report this was evidently due to the increasing failure of the sources of drinking water-supply, and the use of unwholesome food by the poorer classes owing to the large rise in the prices of food-grains . . . It prevailed with unusual virulence in the districts of Balasore (population 1,071,197) and Puri (population 1,017,284) where 26.20 and 14.41 per mille of the people succumbed to it against 10.29 and 9.04 in 1907 . . . The following appears in the annual report of Balasore regarding the unprecedented devastation caused by cholera in that district. The civil surgeon, Dr. P. H. Rigby, M.D., says :—

'It appeared in an epidemic form in Balasore, Soro, Bhadrak, Basudebpur and Chadbally thanas and sporadically in all the remaining thanas, due to famine and the consequent consumption of highly injurious food-stuffs, and to the villagers drinking water from foul tanks owing to water scarcity, and to the insanitary condition of their surroundings.'"

Is it any wonder that smallpox should increase under such conditions? And what is to be said for the intelligence and humanity of the "sanitary officials" whose only remedy for "protecting" the infants of these weakly and impoverished natives from smallpox, is to further deplete their vitality by adding disease to disease and filth to filth?

Smallpox and Vaccination increase together.

When the figures for the various registration divisions are compared, the utter absence of any intelligible relation between the extent of vaccination and the prevalence of smallpox is at once apparent. This is shown by the following tables :—

BENGAL.

AVERAGE ANNUAL NUMBER OF PERSONS SUCCESSFULLY VACCINATED, PER 1,000 OF POPULATION.

Division.	5 years previous to 1902–3	5 years previous to 1907–8	1907–8	1908–9
Burdwan	25.24	35.34	36.86	40.87
Presidency	29.20	33.15	34.98	38.73
Patna ..	23.84	29.05	31.03	31.04
Bhagalpur	32.03	37.97	34.44	34.31
Orissa ..	25.13	44.86	43.54	46.01
Chota Nagpur	27.28	35.60	40.12	40.04
Whole Province	28.87	34.97	35.77	36.86

AVERAGE ANNUAL NUMBER OF DEATHS FROM SMALLPOX, PER 1,000 OF POPULATION.

	5 years. 1893-97	5 years. 1898-02	5 years 1903-07	1908
Burdwan	.22	.83	.48	.47
Presidency	.11	.19	.27	.27
Patna ..	.47	.25	.29	1.23
Bhagalpur	.17	.21	.48	.40
Orissa ..	.75	2.08	.66	.68
Chota Nagpur	.13	.52	.12	.80
Whole Province	.19	.39	.37	.71

The only certain conclusion to be drawn from the above tables is that during the past few years smallpox and vaccination have increased together.

Even more overwhelming testimony as to the uselessness of vaccination is, however, afforded by the experience of the towns as compared with that of the rural areas.

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Comparative Mortality in Towns and Rural Areas.

Major James admits "that by 1887 the compulsory Vaccination Act had been extended to 129 of the 157 towns in the province, and that since 1892 it has been in force in nearly all the towns." It becomes important, therefore, to ascertain whether the towns have enjoyed a greater immunity from smallpox than the rural areas.

The following table gives the answer :—

SMALLPOX MORTALITY PER 1,000 OF POPULATION.

	In Towns.	In Rural Areas.	Combined
1897-1901	.44	.27	.28
1901	1.09	.47	.50
1902	.37	.79	.77
1903	.23	.41	.40
1904	.24	.23	.23
1905	.22	.13	.14
1906	1.37	.37	.43
1907	1.04	.54	.57
1908	.90	.69	.71

It will be observed from the above table that 1902 and 1903 are the only years in which the rural areas suffered more severely than the towns. In view of this fact the following extracts from the Annual Reports of Major Clarkson, the Sanitary Commissioner for Bengal, are extremely illuminating :—

In his Report for the year 1902 Major Clarkson says :—

"Smallpox which has been increasing in severity of late years raged with unprecedented fury during the year under review.† The total number of deaths from this cause which was 13,116 in 1899, and increased to 20,620 during the next year, and was followed by a further rise to 37,680 during 1901, now mounted to the alarming total of 57,430, the corresponding ratios being .18, .29, .50, and .77 per mille, respectively. It is noticeable that while the number of vaccinations performed has risen from 2,133,951 in 1898-99 to 2,650,788 in 1901-1902, the mortality from this disease has more than quadrupled during this period. Assuming that it is practically certain that vaccination is followed by a marked decrease in the smallpox mortality, the death statistics as returned by the police (which may be taken as approximately correct) raise a cloud of suspicion against the accuracy of the figures returned as successfully vaccinated. The present arrangement by which vaccination in outlying tracts is practically left to the unchecked supervision of the subordinate inspecting staff is somewhat risky and defective. Proposals have lately been submitted to the Government to remedy this state of things."

In his Report for the year 1903 Major Clarkson says :—

"The total number of deaths from smallpox in towns and rural areas during the year under review amount to 894 and 29,565, respectively, against 1,382 and 56,048 during the preceding year, the corresponding ratios being .23 and .41 per mille against .37 and .79. The comparatively smaller mortality in towns is due to the fact that the Compulsory Vaccination Act, V. (B.C.) of 1880, is in force in almost all of them, and any opposition to vaccination on sentimental grounds is easily overcome. Moreover, vaccination here is performed free of charge at the depôts established under the Act. In rural areas vaccination is almost left to fight out its own way among the people who frequently object to pay the small fee of two annas (i.e., 2d.) levied by the licensed vaccinators for each successful case of vaccination; hence a much larger proportion of the people in towns are vaccinated and enjoy greater immunity from smallpox than those living in rural areas." (p. 12).

On reference to the table printed above, it will be seen that Major Clarkson's eulogy of the superior vaccinal condition of the towns in years 1902-3 as compared with the rural areas, is reduced to an absurdity by the simple fact that in the years immediately preceding, and in the years immediately following, 1902-3, the towns suffered much more severely than the rural districts!

The same lesson is also taught by the experience of the towns when compared with one another. Major James admits that the Compulsory Vaccination Act has been in force in nearly all the towns since 1892, and yet the reports show extraordinary differences between the smallpox experiences of the various towns, differences which are altogether inexplicable on the theory that the incidence of smallpox is merely a matter of much or little vaccination. In each year some towns escape smallpox altogether while others suffer from it most severely. The following table summarizes the figures for the past four years. Col. (1) shows the number of towns in which the smallpox death-rate exceeded 1,000 per million of the population; Col. (2) the number of towns in which no deaths from smallpox occurred; and Col. (3) the total number of towns sending returns :—

Year.	(1)	(2)	(3)
1905 ..	1	68	127
1906 ..	16	35	129
1907 ..	27	25	128
1908 ..	23	26	128

The Capital's Climax.

The experience of Calcutta is, however, even more astounding than that of the Bengal towns as a whole.

Major James records that in May, 1806, a present of £4,000 was transmitted to Dr. Jenner from "the principal inhabitants of Calcutta and its dependencies as a testimonial of their gratitude for the benefits which this settlement, in common with the rest of mankind, has derived from his inestimable discovery of a preventive of smallpox"; that by the year 1854 an efficient system of vaccination had been established in Calcutta; and that "in Calcutta and its suburbs smallpox inoculation was prohibited by law in 1865; and in villages in the neighbourhood of

† In his comments on the Report, the Lieut.-Governor says that the smallpox death-rate in September, 1902, "was much the highest on record." He also adds that "smallpox which claimed the next largest number of victims after fever and cholera, pursued its customary course, gathering strength during the cold weather, and then dying off gradually until the close of the rains. In those districts, however, where the people live in detached homesteads its incidence was slight, and as has usually been the case in such localities, no seasonal variations were discernible."

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Calcutta, and in several large stations in Bengal proper, in 1866." In 1880 compulsory vaccination was adopted.

One would expect, therefore, that from 1880 smallpox would have declined enormously. The following figures show an exactly opposite state of things.

AVERAGE ANNUAL NUMBER OF DEATHS FROM SMALLPOX IN CALCUTTA SINCE 1880, PER MILLION OF THE POPULATION.

1881-1890	386.3
1891-1900	648.7
1901-1910	1327.2

It may be added that the high rate in the 1901-10 period is due to the abnormal mortality from smallpox which occurred in the years 1901, 1906 and 1909, when the rates reached 3,345, 3,038 and 3,750 per million respectively, the last figure being the largest for any year during the previous 28 years.

No wonder Maior James takes care not to give these figures. Fortunately they are easily accessible to English readers. We have summarized the foregoing table from the return of the deaths from various causes in foreign cities which appears in the English Registrar-General's annual summary of Births and Deaths.

The following tables show the vaccinal and smallpox records for Calcutta during the past few years, in the same form as those already given for the various registration divisions :—

AVERAGE ANNUAL NUMBER OF PERSONS SUCCESSFULLY VACCINATED, PER 1,000 OF THE POPULATION.

5 years previous to 1902-3 ..	21.17
5 years previous to 1907-8 ..	31.32
1907-8	29.58
1908-9	54.94

AVERAGE ANNUAL NUMBER OF DEATHS FROM SMALLPOX PER 1,000 OF THE POPULATION.

1898-1902	.86
1903-1907	1.08
1908	.68
1909	3.75

The Annual Reports of the Sanitary Commissioner contain a table comparing the mortality in Calcutta with that prevailing in all the other towns (i.e., the mufassal or country towns) in Bengal. The following figures have been taken from the table in question :—

MORTALITY, PER 1,000 OF POPULATION.

Year.	Calcutta. From small-pox.	Calcutta. All causes.	Bengal towns. From small-pox.	Bengal towns. All causes.	Bengal province. From small-pox.	Bengal province. All causes
1902 ..	.14	37.04	.43	35.66	.77	33.43
1903 ..	.05	35.10	.29	36.77	.40	33.33
1904 ..	.08	32.22	.29	35.58	.23	32.45
1905 ..	.32	37.95	.18	40.75	.14	38.53
1906 ..	3.42	35.73	.64	34.78	.43	36.08
1907 ..	1.51	37.67	.88	35.71	.57	37.72
1908 ..	.68	32.65	.98	30.68	.71	38.56
Average	.88	35.48	.53	35.70	.46	35.73

It will be observed that during the years 1902–3–4 the incidence of smallpox was higher in the towns generally than in Calcutta. This led the Sanitary Commissioner to say, in his report for 1904, that "vaccination, drainage, and the water-supply arrangements of Calcutta being much better, it enjoys considerable immunity from the ravages of smallpox . . ." as compared with the mufassal towns. It will, however, be also seen from the table that the figures for 1905–6–7 completely reverse the position of things, and thereby provide convincing proof of the futility of Calcutta's vaunted superiority in the matter of vaccination.

Vaccinated and Unvaccinated Fatality Statistics.

One of the most extraordinary features about the Indian Sanitary and Vaccination Reports is the absence of statistical information as to the fatality rates amongst previously-attacked, inoculated, vaccinated and unvaccinated cases, respectively. In view of the large number of cases of and deaths from smallpox in India amongst all these classes, it ought to be possible for much information of immense importance to be obtained, e.g., as to the extent to which repeated attacks of smallpox occur, or as to the number of cases occurring amongst inoculated people, vaccinated babies, &c. Major James says in his book that he is not aware that any figures of this description which can be relied upon have been collected on a large scale for India, and he quotes some small figures of his own which he says he has gathered together at some labour (p. 98). But why are such figures not officially ascertained, and why should it be necessary for Major James to have to gather his useless handful? Is it because the figures would not be calculated to preserve vaccination from reproach?

We notice that the absence of these figures in the official reports has attracted the attention of the Lieutenant-Governor of Bengal. In his comments on the Sanitary Commissioners' Report for 1902, he says :—

"The Lieutenant-Governor would be glad if the Sanitary Commissioner could arrange to adduce some more direct evidence than is at present furnished of the efficacy of vaccination in warding off the disease or mitigating its severity. It might be possible to arrange that whenever a death from smallpox is reported, information should at the same time be obtained from the chaukidar or other reporting agency, whether the death is that of a vaccinated or of an unvaccinated person. If this could be done a real criterion of the success of vaccination would be available, which might serve to convince the general public of the value of this means of prevention; and moreover the continual inquiry whether the deceased had been vaccinated would direct their attention to the subject and lead them to note the evidence themselves."

Some statistics of this kind were accordingly obtained from the Civil Surgeons in the various districts. The following is a summary of the figures as given in the reports :—

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Year.	Vaccinated or otherwise protected.	Unprotected.	Not ascertained.	Total.
1904–5	4,662	5,873	1,228	11,763
1905–6	3,821	5,918	2,351	12,090
1906–7	8,865	10,247	4,431	23,543
1907–8	13,515	11,943	6,156	31,614
1908–9	18,843	13,702	8,382	40,927
Total ..	49,706	47,683	22,548	119,937
	41.4%	39.8%	18.8%	100%

The Sanitary Commissioner, however, considers that the figures are quite unreliable. Here are his yearly comments upon them :—

1904-5.—"The figures are so unreliable that no conclusion can be based on them."

1905-6.—"No reliance can be placed on these figures and no useful conclusions can be drawn from them."

1906-7.—No remarks.

1907-8.—"These figures being reported by chaukidars, cannot be relied on as accurate."

1908-9.—"These figures are altogether unreliable, being recorded by the illiterate chaukidars, and do not, therefore, serve as a guide in testing the efficacy of vaccination in warding off smallpox."

The Sanitary Commissioner avoids stating precisely in what respect he considers the figures "unreliable." As they were collected with the avowed object of bolstering up a case for vaccination, it is not likely that they err on the side of Jennerism. It ought surely to be possible to obtain reliable figures of this description, especially in, say, Calcutta. The fact that reliable figures are not produced is certainly calculated to create the impression that the officials fear their publication. There is every probability for example, that if the 50,000 vaccinated deaths in the above table were honestly classified according to age, they would show thousands of deaths of vaccinated babies. It is not surprising, therefore, that reliable figures are not willingly produced. The surprising thing is that the Lieutenant-Governor is content to be fudged off with such palpable evasions of the truth.

Smallpox amongst Infants and Children.

We venture to suggest that one very important point on which the Lieutenant-Governor might attempt to get at the truth is in regard to the enormous number of cases of and deaths from smallpox which take place amongst infants and children.

In this connection we may draw attention to the following extraordinary statement which appears in the Sanitary Commissioner's "Sixth Triennial Report of Vaccination in Bengal during the years 1902-1903, 1903-1904, and 1904-1905" :—

"In this country it is usually the adults amongst whom the greatest number of deaths from smallpox occur and who keep the disease alive. Twenty-five years ago vaccination of children was not as good as it is now, consequently the number of unvaccinated adults of about 25 years of age is much greater than the number of unvaccinated children at 5 years. Also, even if adults have been vaccinated as children, they may contract the disease themselves, though the chances of recovery are much below (*sic*) if they have been protected in childhood."

It is difficult to understand how a statement of this kind could be penned, because the annual Sanitary Reports, issued by the same official, furnish plain proof of its falsity in the form of a table giving the smallpox deaths amongst children, and their proportion to the total smallpox mortality. The figures in question, for the past few years, are summarised below :—

BENGAL.

SMALLPOX DEATHS AMONGST CHILDREN.

Year.	Under 1 year.	1 year to 5 years.	5 years to under 10 years.	Total under 10 years.
1901	5,812	8,501	5,567	19,880
1902	10,433	13,909	8,440	32,782
1903	5,739	8,122	4,870	18,731
*1904	3,153	4,438	2,463	10,054
*1904	2,171	3,123	1,716	7,010
1905	1,350	2,202	1,045	4,597
1906	3,708	6,198	2,714	12,620
1907	5,074	7,716	4,032	16,822
1908	6,028	8,668	5,230	19,926

The following summary shows the proportion of the above figures to the total smallpox mortality :—

1901	15.42	22.56	14.77	52.76
1902	18.16	24.21	14.69	57.08
1903	18.80	26.69	15.98	61.49
*1904	18.19	25.60	14.21	58.00
*1904	19.57	28.14	15.47	63.20
1905	18.71	30.52	14.48	63.73
1906	16.69	27.91	12.22	56.83
1907	17.45	26.54	13.87	57.87
1908	16.76	24.10	14.54	55.40
Average	17.75	26.25	14.47	58.48

[*NOTE.—The population of Bengal prior to the partition of the Province was 74,428,193 (1901 census), and after the partition it was 49,891,164, a diminution of about one-third. The above figures for the years 1901, 1902, 1903 and 1904 (first line) refer to the province as it was before the partition, and those for the years 1904 (second line), 1905, 1906, 1907 and 1908, refer to the Province as it was after the partition.]

These figures show that, so far from the greatest number of deaths from smallpox occurring amongst adults, over 58 per cent. have occurred amongst children under 10 during the 8 years 1901-8. This percentage is, however, considerably lower than that for India as a whole, as is shown by the following table :—

AVERAGE PERCENTAGE OF CHILDREN IN TOTAL SMALLPOX MORTALITY DURING THE 4 YEARS 1905–8.

In Major James's Well-Vaccinated Provinces.

Province.	Per cent.
Bombay	65.57
United Provinces	87.40
Central Provinces and Berar	74.20
Punjab	82.85
Madras	69.2

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In Major James's Badly-Vaccinated Provinces.

Bengal	58.44
Assam and E. Bengal	54.93
Lower Burma	31.77
Upper Burma	34.00

In Major James's Omitted Provinces.

N.W. Frontier	88.05
Coorg	not available
Ajmer-Merwara	95.94
British India	70.30

It will be noticed that the foregoing table reveals a striking diminution in the rate per cent. in the case of Major James's badly-vaccinated provinces. The low rates in Lower and Upper Burma are particularly significant in view of Major James's statement that "probably vaccination has met with more opposition in Burma than in any other province in India. As in the neighbouring country of China, the great majority of the people are wedded to the practice of smallpox inoculation."

Smallpox and Vaccination at Darjeeling.

The page in the Sixth Triennial Vaccination Report which contains the grotesque statement about the incidence of smallpox in the cases of the child and adult populations, respectively, also contains the following :—

"In Northern Bengal, Nepal is a constant source of infection from which the neighbouring districts contract the disease. It is only the fact that the Darjeeling district is very well vaccinated that keeps the smallpox figures as low as they are there."

The report containing this statement appeared in 1905. Refutation followed fast upon it. In the winter months of 1906-7 Darjeeling district was visited by a serious epidemic of smallpox. The following table gives particulars of the deaths :—

DARJEELING TOWN AND DISTRICT.

Year.	No.	Deaths from smallpox. Rate per 1,000 of pop.	Deaths from all causes per 1,000 of population.
1906 Town ..	23	1.35	20.62
1906 District ..	55	.22	42.44
1907 Town ..	41	2.42	19.73
1907 District ..	72	.28	35.94

The population of Darjeeling Town is 16,924, and that of the District 249,117.—1901 census.

It will be noticed from the above table that, although Darjeeling Town suffered far more severely from smallpox than the district as a whole, its general death rate was only about half that of the district. The figures derive further significance from the fact that Darjeeling Town is probably the best vaccinated town in India. One of the two Vaccine Depôts for Bengal is stationed there, the other being at Calcutta. The town is also famous for its healthy situation on the lower slopes of the Himalayas. It is the great health resort for Bengal officials, and special provision in the form of a sanatorium has been made there for their accommodation. In a word, it is the last place in India that one would expect to be visited by epidemic smallpox. In view of these circumstances we think it a matter for great surprise that the Lieutenant-Governor should have deemed it sufficient to dismiss the epidemic with the remark that "a severe outbreak of smallpox occurred in the Darjeeling district during the year, and as a natural result there was a large increase in the number of vaccination operations performed." Had he taken the trouble to look into the matter he would have found that the Darjeeling District has for many years past been much better vaccinated than the province as a whole. This is shown by the following figures :—

RATIO OF SUCCESSFUL VACCINATIONS PER 1,000 OF POPULATION.

Year.	Darjeeling District.	Bengal Province.
1904–5	62.36 ..	36.01
1905–6	79.45 ..	35.88
1906–7	78.98 ..	35.56
1907–8	67.81 ..	35.77
1908–9	66.55 ..	36.86
Average ..	*71.03* ..	*36.01*

During the 5 years ending 1902 03 the average ratio in Darjeeling District was 96.63, while that for the province as a whole, during the same period, was only 28.87. The Reports do not show the vaccination figures for the *town*, but in view of the circumstances already mentioned there is no doubt that the ratio per 1,000 there will be even greater than that for the district as a whole, a fact which lends peculiar significance to the following comparison of the smallpox death rates in Darjeeling Town, Darjeeling District and Bengal Province :—

RATIO OF DEATHS FROM SMALLPOX PER 1000 OF THE POPULATION.

Year.	Darjeeling Town.	Darjeeling District.	Bengal Province.
1906 ..	1.35 ..	.22 ..	.43
1907 ..	2.42 ..	.28 ..	.57

"The Dangers of Arm-to-Arm Vaccination."

In the Sixth Triennial Vaccination Report we are told that "a very large majority of the people of Bengal object to have their infant children vaccinated" (p. 3), but no attempt is made to indicate *why* the parents object. We think the most likely explanation is their bitter experience of the dangers attending the operation. Indirect proof of this is afforded by the following remarks in the Annual Vaccination Report for the year 1906-7 :—

"During the beginning of the last vaccination season, a course of instruction on (1) the principles of sepsis, (2) the proper method of vaccination, (3) practical instruction in the preparation of vaccine lymph from the calf, and (4) *the dangers of arm-to-arm vaccination*, was given by the Sanitary Commissioner, Bengal and Orissa Circle, and the Civil Surgeon of Cuttack to the Inspectors of Vaccinations, at Patna, Calcutta, and Cuttack. The instruction received by the Inspectors was imparted by them to the Sub-Inspectors of Vaccination and the vaccinators. Anti-septic vaccination was also introduced

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throughout the province. The result of the system, on the whole, is reported to be satisfactory, *sore arms having greatly diminished.*"

The sentences we have italicised in the above paragraph afford eloquent, if indirect, testimony as to the dangers which must have attended the vaccination operations in the past, and probably still attend them in a large degree.

The following statistics as to the different methods of vaccination adopted during recent years afford further proof of the dangerous possibilities of the vaccination operations performed in Bengal :—

PRIMARY VACCINATIONS.

Year.	Direct from the calf.	With Lanoline paste.	Arm-to-Arm process.
1905–6 ..	151,080	400,847	1,352,698
1906–7 ..	87,803	696,415	1,090,758
1907–8 ..	93,049	775.319	979,753
1908–9 ..	73,424	1,058,995	804,450

RE-VACCINATIONS.

1905–6 ..	6,680	98,861	31,064
1906–7 ..	5,718	96,801	59,778
1907–8 ..	4,704	107,697	53,029
1908–9 ..	8,301	228,901	67,505

The decline in arm-to-arm primary vaccinations is due to the abolition of that method and the general introduction of lanoline lymph vaccination in the districts of the Presidency, Burdwan, and Orissa Divisions under an Order of the Government dated 30th December, 1905. No doubt lanoline lymph is a less mischievous product than crude calf-lymph or arm-to-arm lymph. The Seventh Triennial Vaccination Report (issued 1908), however, contains particulars of a series of experiments conducted by Captain Munro, I.M.S., to test the merits of lanoline lymph and glycerinated lymph. Captain Munro reports strongly in favour of the latter variety. He says :—

" As lymph it is obviously more suitable than the lanolinated variety, for (1) it contains few or no organisms, and inflamed arms should never occur as they do with lanolinated lymph ; (2) it need not be used in such a hurry. When lanolinated lymph is used too long after its preparation it is overgrown with extraneous organisms and the virus is weakened. Many failures in vaccination occur from this cause."

Captain Munro recommended that glycerinated lymph might be given a trial in Bengal in some selected area. The next year's report (1908-9) states that experiments were carried on in certain districts with encouraging results. " Its only drawback," says the Sanitary Commissioner, " is that it deteriorates in transmission through heat and requires careful handling by the vaccinators, and does not retain its efficacy so long as the lanoline paste. I shall, however, give this lymph a further trial exclusively in two or three selected districts during the present year, and if successful, the question of its general introduction will be considered." In the meantime the people are being increasingly submitted to the admittedly serious risks attending the use of lanolinated lymph. Small wonder that " the deep-rooted prejudice of the people " stands in the way of the progress of this reckless gambling with the blood of the infant life of India.

BOMBAY.

(Population in 1901—18,481,362).

Much space has been devoted to the smallpox experience of Bengal because it is more or less typical of that of all the other provinces. It will only be necessary, therefore, to briefly outline certain special features of the experience of the other provinces to be dealt with in this article.

Bombay has the " honour " of being the first town in India to participate in the " benefits " of Jennerian vaccination. The first operation was performed there on the 14th June, 1802, on the arm of Anna Dusthall, and from this patient vaccine virus was sent all over India. Major James says that " in these two Presidencies (Madras and Bombay) the natives as a whole had even at this early period few prejudices against vaccination, but in Bengal the obstacles to be overcome were very great " (p. 19). " The next date of great importance in the history of the advancement of vaccination in India," says Major James, " was 1827, in which year the Bombay system of vaccination, was introduced " (p. 21). This was a system by which vaccination was taken to the doors of the people by means of a large staff of native vaccinators under the supervision of a European Medical Officer. " This excellent system," we are told, " was followed by the Bombay Presidency alone for many years, but was ultimately taken as the model upon which the improved systems in most provinces were based." This is apparently the reason why Major James regards the Bombay Presidency as the best vaccinated Presidency in British India.

Bombay's Reward.

Statistical information begins with the year 1868. The following table shows in col. (1) the annual average smallpox mortality per million of the population, and in col. (2) the annual average ratio of successful vaccinations per 1,000 of the population :—

	(1)	(2)
1868—1877 ..	837.0*	.. Not available
1878—1887 ..	267.2	.. 28.9
1888—1897 ..	207.6	.. 32.1
1898—1907 ..	275.3	.. 25.8
1908	136.7	.. 28.7
1909	271.6	.. 29.4

These figures show a considerable fall in smallpox after the first decade. It is impossible, however, to connect that fall with vaccination because there is every reason to believe that the operation was as extensively practised in the first period of the above table as it was in any of the others.

It will be observed that there was an increase of smallpox and a diminution of vaccination in the fourth decade. The former was due to the very heavy smallpox mortality in the year 1905, viz. : 919 per million of the population, the heaviest rate recorded since the year 1877. The diminution in the vaccination returns is attributed by Major James to the advent of the plague in 1896 " making it exceedingly difficult to persuade the people to have their children vaccinated." The futility of this explanation

* This is an approximate figure. It is based on Major James's Chart I.

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will be apparent on a comparison of the above table with the similar table for Bengal given on page 23. Although the vaccination returns in the latter province increased considerably in the third decade, the smallpox death-rate increased enormously, and in 1909 reached the extraordinary figure of 764.5 per million.

The relative insignificance of smallpox as a cause of death in the Bombay Presidency is shown in the following table :—

ANNUAL AVERAGE MORTALITY FROM PRINCIPAL DISEASES PER 1,000 OF POPULATION.

	5 years 1898-02	5 years 1903-07	1908.
Fevers	16.60	13.98	13.17
Plague	5.66	7.81	1.48
Dysentery and Diarrhœa.. ..	5.02	3.12	2.21
Respiratory diseases	—	3.16	2.96
Cholera	2.07	.80	.09
Smallpox	.23	.32	.14
All causes ..	42.25	37.00	27.15

The following figures for the years 1904-5-6 alone are even more striking :—

	1904.	1905.	1906.
Fevers	13.60	13.28	14.86
Plague	12,12	3.86	2.79
Dysentery and Diarrhœa.. ..	3.33	3.00	3.34
Respiratory Diseases	3.22	2.95	3.28
Cholera	.71	.29	2.49
Smallpox	.23	.92	.22
All causes.. ..	41.39	31.84	35.06

As in the case of Bengal these tables also afford overwhelming proof of the utter senselessness of the millions of vaccinations performed in India. If the large sum annually wasted in the depreciation of the already too scant vitality of the Indian people* were spent in sanitary efforts to secure the diminution of the enormous death-rates from the zymotic class of diseases generally, the present relatively small death-rate from smallpox would soon become altogether insignificant.

Comparative Mortality in Towns and Rural Areas.

Major James says that, " practically speaking, vaccination is optional throughout the whole of this large Presidency (it is compulsory in only seven towns)."

In the Sanitary Commissioner's 41st Annual Report for 1904 we are also told that—

" against such a relentless foe as smallpox the Bombay system of non-compulsory vaccination is but a weak defence. Reference to the incidence of smallpox since 1893 shows that it is endemic in this Presidency, becoming epidemic every few years. Until primary vaccination in infancy and re-vaccination at puberty is made compulsory it is hopeless to expect this scourge of humanity can be banished from the Presidency."

It is a simple matter to explode this choice specimen of Jennerian stupidity by a reference to the experience of Bombay City (population in 1901, 760,475) and Karachi (population in 1901, 112,900), the two principal towns in which compulsory vaccination has been enforced, in the first case since 1877 and in the second since 1879. The following table shows the smallpox experience of these two towns as compared with the other towns and the Presidency generally.

SMALLPOX MORTALITY PER 1,000 OF POPULATION.

Year.	Bombay.	Karachi.	Other Towns (62) as a whole.	Presidency.
1903 ..	1.92	.02	.13	.15
1904 ..	.74	.25	.50	.23
1905 ..	2.82	.46	2.00	.92
1906 ..	.36	2.00	.21	.22
1907 ..	.09	.06	.06	.10
1908 ..	1.06	1.23	.25	.14

It will be seen from this table that the incidence of the disease is much greater in the case of the two principal towns in which vaccination is compulsorily enforced, than it is in the case of the other towns as a whole or of the presidency generally.

Bombay City.

The experience of Bombay City (like that of Calcutta) is alone sufficient to knock the bottom, top and sides out of the case for vaccination.

The " Bombay system of vaccination," so much bepraised by Major James, would, of course, be most efficiently administered and extensively applied in the capital city.

We have extracted the smallpox history of the city from the English Registrar-General's Annual Summary since 1881 with the following result :—

AVERAGE ANNUAL NUMBER OF DEATHS FROM SMALLPOX IN BOMBAY CITY, PER MILLION OF THE POPULATION.

1881—1890	385.8
1891—1900	725.2
1901—1910	849.0

The high rate in the second decade was due to a specially severe epidemic in 1900, when the mortality reached the extraordinary figure of 3,650 per million. Bombay City escaped much more lightly than Calcutta in the third decennial period. Its immunity is, however, more apparent than real. The citizens of Bombay escaped death from smallpox only to die from plague, which was very prevalent in that period. The following table furnishes proof of the enormous general mortality caused by the presence of plague in Bombay during the years in question. The death rates for London are added by way of comparison :—

* In commenting on the enormous prevalence of malarial fever during the year 1906, the Deputy Sanitary Commissioner for the Sind Registration District says : —" The result of this widespread disease has been disastrous in many ways. Zemindars complained that they could not get labour for agricultural purposes, and as a large number of the victims were young infants, the vaccinators reported that they could not get children on whom to operate, many having succumbed to the prevailing complaint, and others who had not actually died were so debilitated as to be unfit for vaccination."

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AVERAGE ANNUAL DEATH RATE PER 1,000 PERSONS LIVING.

	Calcutta.	Bombay.	Madras.	London.
1881—1890 ..	27.8	28.6	40.2	20.3
1891—1900 ..	32.4	48.0*	41.6	19.2
1901—1909 ..	33.0	52.9	43.4	15.3

The following tables show the vaccination and smallpox rates for Bombay City in the same form as those already given for Calcutta :—

AVERAGE ANNUAL NUMBER OF PERSONS SUCCESSFULLY VACCINATED, PER 1,000 OF POPULATION.

5 years previous to 1902—3	17.98
5 years previous to 1907—8	15.75
1907—8	16.35
1908—9	16.78

NOTE.—The low ratio of vaccinations per 1,000 of the population is due to several causes, but mainly to the following—(*a*) low birth-rate and (*b*) heavy infantile death rate. Over one-half of the infants born in Bombay city die before they reach the age of 12 months. There can be little doubt, however, that all the surviving infants are duly cowpoxed.

AVERAGE ANNUAL NUMBER OF DEATHS FROM SMALLPOX, PER 1,000 OF POPULATION.

1898—1902	.97
1903—1907	1.19
1908	1.06
1909	.49

The Bombay reports make no attempt whatever to indicate the vaccinal condition of the deaths from smallpox. The Sanitary Commissioner says, in his report for the year 1908, "no reliable information is available with regard to condition as to vaccination of persons dying from smallpox." It is certain that much valuable information could readily be made available (especially in the case of Bombay City and Karachi where the cases are treated in smallpox hospitals) if it were not for the fact that its publication would spell ruin to the reputation of vaccination. During the five years 1904—8, the following deaths from smallpox took place in Bombay City alone :—

	Smallpox Deaths	Per cent. of total.
Under 1 year of age ..	1,306	32.0
1 to 10 years	1,114	27.0
Above 10	1,664	41.0
Total	4,084	100.0

No doubt the vast majority of these fatal cases were treated in the smallpox hospital, hence it is absurd to suppose that it was not possible to obtain reliable information as to their vaccinal condition. It is a scandal that the officials should be allowed to suppress the information. Instead of publishing the real facts they cunningly suggest that all the deaths of children from smallpox must be unvaccinated. For example the Sanitary Commissioner says in his Report for 1908 : "Of the total number of deaths from smallpox, 666 were of children under one year of age, and 900 of children between the ages of one and ten years. All the former, with the exception of the very young, and most of the latter should have been fully protected by vaccination." This statement is typical of Jennerian methods. It avoids stating whether the children were or were not vaccinated. It is practically certain that many, if not all, of the elder ones would be vaccinated, particularly in view of the fact that 220 of the deaths, between one and ten years, took place in Bombay City, where vaccination is compulsorily enforced.

It need scarcely be added that in the event of the publication of vaccination statistics by the Indian officials, the Hospital Registers or other records should be thrown open to public inspection, as is done in England.

* In the year 1900 the rate was 96.4 !

Lymph Dangers.

Experiments have been carried out in recent years in the Bombay Presidency (as in Bengal) with a view to replacing the arm-to-arm and lanolinated lymphs, with chloroformed glycerinated lymph, with the result that the latter description of lymph has been brought into general use, except in Sind, where human lymph is still the prime brand.

The following table shows the different lymphs used during the year 1908-9 :—

	Operations.	Per cent. of total.
Glycerinated lymph ..	482,785	73.0
Human lymph	145,614	22.0
Calf to arm	33,603	5.0
Total ..	662,002	100.0

It is interesting to note the following admissions in connection with the experiments with the lanolinated and glycerinated lymphs, which were carried out by Captain Hutchinson, in 1904–5 :—

"Lanolinated lymph caused in many cases considerable inflammation, disturbance, ulceration, glandular abscess and general vaccinia. It is found extraneous micro-organisms invariably associated with lymph abstracted from the abdomen of the calf flourish and multiply in lanoline vaccine, whereas in chloroformed glycerinated lymph they are rapidly and completely destroyed. So far as experiments go there is no doubt choice should be given to glycerinated vaccine."

The old, old story. Each new lymph is perfect until it is found out, and another "perfect" substitute is put in its place. In view of the emphatic condemnation of lanolinated lymph by Captain Munro in Bengal (see p. 29) and Captain Hutchinson in Bombay, it is strange, to say the least, that Lieut.-Col. Clarkson, Sanitary Commissioner for Bengal, should refer to the general introduction of lanoline lymph in certain Bengal districts as a "useful reform," and add "superiority of this method of vaccination over the arm-to-arm process is beyond question." (Seventh Triennial Vaccination Report, 1908, p. 10). If that is so, we can only wonder what results have been and are being produced by the arm-to-arm process.

There are certain little admissions in the Reports, however, which make it clear that the official eulogies of the harmlessness of glycerinated lymph must be accepted with some reserve. For example, in the Bombay Vac-

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cination Report for 1908-9 we are told that the cost of the Belgaum Vaccine Depôt (at which the glycerinated lymph for the Bombay province is manufactured) had increased considerably during the year, partly because of "a severe and fatal epidemic among the calves." A discreet silence is observed as to the nature of the epidemic. It is not necessary, however, to dilate upon the tremendous possibilities of vaccine contamination involved in the production of lymph under such conditions.

MADRAS.

(Population in 1901, 37,315,611).

Major James says that "the introduction of a good vaccination system in this Presidency dates from 1865, when an organisation on the Bombay plan was formed." The previous system, which had been in force since 1803, had not been found satisfactory, as "the supervision of the work of the native vaccinators was very inadequate."

We happen to have a copy of the "Report on Vaccination" issued by the Madras Government in respect of the year 1865. This report embodies the results of the first year's operations of the Vaccine Department, under the new organisation. Amongst many items of interest we notice the following :—

"From the tables submitted by the Director of Public Instruction, it would appear that, in all the Government Schools in this Presidency, in the year 1865, only 40.96 per cent. of the scholars were vaccinated, 16.30 per cent. were unvaccinated, and 42.73 per cent. were smallpox marked."

It is clear from these figures that even before the "good vaccination system" began in 1865 the population of Madras were very well "protected" either by vaccination or previous smallpox, a fact which gives the following figures a special significance :—

(1) Annual Average Smallpox Mortality per million of the population ;
(2) Annual Average Ratio of Successful Vaccinations per 1,000 of the population.

	(1)	(2)
1868—1877 ..	1261.0*	Not available
1878—1887 ..	1041.7	19.2
1888—1897 ..	780.7	29.0
1898—1907 ..	596.5	31.3
1908	604.2	26.5
1909	514.0	37.4

It will be observed on comparing these figures with the like figures for Bengal and Bombay, that Madras has suffered much more severely from smallpox during the past 40 years than either of those provinces, despite the "good vaccination system" adopted in 1865. On the other hand, the following table shows that the Madras Presidency has suffered far less than the other two provinces from fevers, and that its general death-rate is strikingly lower than that of Bengal and Bombay :—

ANNUAL AVERAGE MORTALITY FROM PRINCIPAL DISEASES, PER 1,000 OF POPULATION.

	5 years 1898 to 1902	5 years 1903 to 1907	1908
Fevers	8.0	8.0	8.0
Dysentery and Diarrhœa ..	1.0	1.5	1.7
Cholera	1.6	1.6	3.9
Respiratory Diseases		.6	.8
Smallpox ..	.7	.5	.6
Plague	.1	.2	.1
All causes ..	21.2	23.6	26.2

The general mortality of the Madras Presidency is usually much below that of Bengal and Bombay. It has long been so. The prime causes are no doubt its greater proximity to the sea, and the large area of plateau land and hill-tracts which forms so marked a feature of this province. In view of the more favourable physical features of Madras, the failure of its "good vaccination system" to prevent the heavy smallpox mortality of the province is all the more striking.

Incidence of Smallpox in towns and rural areas.

Vaccination is compulsory in all the Municipal Towns (60) of Madras. Hence one would expect to find the towns as a whole invariably escaping more lightly than the rural districts. In some years they do and in others they do not. In 1906 the towns fared worse than the rural districts and the Sanitary Commissioner commented on the matter as follows :—

"Comparing the incidence of mortality in urban areas with that in rural tracts, we find that the former exceeded the latter by 0.6 per mille. Having regard to the measure of protection conferred by vaccination on the populations (urban and rural) concerned, in consequence of the law regulating vaccination being compulsory in towns and optional in rural areas, one would expect to find the excess on the side of the rural population. The diminished rate obtained for this latter population can only be set down to defective registration."

Always a shuffle left! In 1907 the position of things happened to be reversed, leading the Sanitary Commissioner to say :—

"In urban areas the death-rate was 0.3 and in rural tracts 0.6—thus evidencing the value of compulsory vaccination in municipal areas."

Heads I win, tails you lose.

Heavy Mortality amongst Children.

The general infantile mortality in Madras is exceptionally heavy, owing to the poverty and ignorance of mothers and to the insanitary environments in which they are born and brought up. It is not surprising, therefore, that smallpox mortality amongst infants is also exceedingly heavy.

The following table shows the incidence of the disease on the child-population :—

*This is an approximate figure. It is based on Major James's Chart V.

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DEATHS FROM SMALLPOX AMONGST CHILDREN.

	Under 1 year	1 to 10 years	Over 10	Total
1904	4,950 (50 %)	2,741 (28 %)	2,200 (22 %)	9,891
1905	7,177 (39 %)	6,513 (35 %)	4,850 (26 %)	18,540
1906	11,121 (37 %)	10,824 (36 %)	7,895 (27 %)	29,840
1907	7,999 (35 %)	8,285 (37 %)	7,171 (28 %)	22,455
1908	6,665 (30 %)	5,955 (27 %)	9,584 (43 %)	22,204
Total	37,912 (37 %)	34,318 (33 %)	30,700 (30 %)	102 930

The Secretary to the Government makes a blundering reference (in his comments on the Sanitary Commissioner's Report for 1907) to the heavy smallpox mortality among children, as follows :—

" More than a third of the deaths from smallpox occurred among children under ten years ; all District Boards and Municipal Councils should therefore encourage re-vaccination as the surest safeguard against the recrudescence of this disease."

On reference to the table it will be noticed that the children's share of the mortality in 1907 was more than two-thirds of the total. It will also be noted, incidentally, that the Secretary's recommendation as to the re-vaccination of children is a virtual admission that the children who die from smallpox have been vaccinated. Small wonder that no attempt is made in the reports to indicate the vaccinal condition of the smallpox deaths generally.

Smallpox in Madras City.

Since 1883-4 Madras City has suffered from smallpox in a much less degree than any other large Indian city. The disease was, however, so very prevalent in the years 1881-2-3-4, that it is difficult to understand the subsequent relative immunity. Probably a system of hospital isolation was introduced after that period. We have not got the official reports at hand, so cannot say. From a vaccination point of view the 1883-4 epidemic ought not to have occurred at all, seeing that a " good vaccination system " had been adopted in 1865. The following table has been extracted from the Annual Summaries of the English Registrar-General. We have shown the years 1881-4 separately in order to emphasize the tremendous improvement in the subsequent years :—

DEATHS FROM SMALI POX IN THE CITY OF MADRAS.

Year.	Ratio per Million.
1881	4,161
1882	897
1883	4,590
1884	10,526
1885—1890	82
1891—1900	105
1901—1910	290

It will be observed that the disease has shown a tendency to increase during the past 25 years as it also has in the cases of Calcutta and Bombay already dealt with. There was a severe epidemic of smallpox in Madras City in the years 1905-6, the mortality rate reaching 586 and 1,144 per million respectively. The Government reports are eloquently silent as to the reasons why there should have been such a serious recrudescence of the disease on the very threshold of the headquarters of the sanitary and vaccination staffs.

Lymph Dangers.

The Madras lymph-supply is manufactured under Government auspices at the " King Institute of Preventive Medicine," Madras. The brand most favoured by the officials there is the lanolinated brand, and this despite the fact of the general condemnation of that brand in other parts of India.

The Sanitary Commissioner's Report for the year 1908-9, after dwelling on the desirability of further aseptic precautions in the production of the lymph, says :—

" Unfortunately the climate of India prohibits the use of glycerine for suppressing contaminating organisms, and lanoline, while being a very suitable diluent, has no antiseptic power. The most thorough application of aseptic methods, therefore, would not get rid of the foreign micro-organisms derived from the calves skin. Captain Christophers, I.M.S., has shown, however, that these foreign micro-organisms are practically represented by a few non-pathogenic species. Something might be done in this direction by chloroforming and dessicating the pulp previous to incorporating it with anhydrous lanoline. This must be the subject of future experiment, however, and meanwhile the aim should be to eliminate all the contaminating micro-organisms derived from the apparatus and instruments used."

The value of Captain Christopher's easy assurance that the " foreign micro-organisms are practically represented by a few non-pathogenic species," may be judged by the admissions which are made in the reports as to the presence of disease in the calves used as vaccinifers. In the Vaccination report for 1906-7 we read :—

" The only failure in the supply of vaccine was due to the contractor being unable to supply a sufficient number of calves, and a subsequent outbreak of foot-and-mouth disease. The admission of infected animals is unavoidable, as the Institute obtains its supply of calves from an extensive area, whence they are brought with the disease in its incipient stages. But it is hoped that with the improved arrangements now made for quarantine and segregation, it will be possible in future to greatly prevent the spread of the disease."

Despite " the improved arrangements " we are told in the next year's report (1907-8) that :—

" There was a small outbreak of foot-and-mouth disease in November, 1907, among the reserve calves, but owing to the prompt measures adopted to stop its spread it soon died out. A few cases recurred in February, 1908, and it was found the infection was acquired in the Guindy race-course, where the calves are sent to graze ;

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this was stopped, and there were no more cases. It has therefore been decided to give up renting the race-course for grazing purposes, as on more than one occasion foot-and-mouth disease has been contracted there."

Again, in the next year's report (1908-9) we read :—

"During the months November, 1908—February, 1909 inclusive, there was a great deal of sickness among the calves. This was at first supposed to be rinderpest, and anti-rinderpest inoculations were given to every calf in and entering the institute. At first the effect of these seemed satisfactory, but after a while even enhanced doses produced but little effect. The reason for this is almost certainly that hæmorrhagic septicæmia was coincidently very prevalent among the calves. The anti-rinderpest inoculations had of course no effect on the incidence of the disease. Everything that could be done in the way of disinfection and isolation was also tried."

The same report mentions that great difficulty is experienced in disposing of done calves, notwithstanding that they are offered at one-third of the purchase-rate on admission. There is evidently little demand for "vaccinated veal" in Madras. As a consequence, the report says that "from time to time considerable numbers of finished calves have been present at the Institute, and the overcrowding so caused has aggravated the effect of the prevalent sickness."

In view of these official admissions it is not necessary to dilate upon the obvious dangers of vaccination as carried on in Madras. No doubt the conditions are as bad and probably worse in all the other Indian Vaccine establishments.

The conclusion of the whole matter.

We have now come to the end of our review of Major James's book and our scrutiny of the recent vaccination and sanitary reports of the three great provinces of British India and their capital cities. Cursory though our enquiry has necessarily been, we venture to submit that it suffices to convict cowpoxing as a disastrous delusion, and proves that what India needs is not blood-poisoning inoculations, but life-building, economic and sanitary reforms.

Until within recent years the Army Sanitary Commission (sitting in England) made a practice of reviewing the sanitary and vaccination reports of the Indian officials, their memoranda thereon being attached as an appendix to the Report on Sanitary Measures in India annually presented to the British Parliament. These memoranda occasionally light up the darkness of Indian officialism with flashes of sanitary lightning. In the 1883 Report, for example (a year of exceptionally heavy smallpox mortality), we read, after a puff of infant vaccination :—

"But smallpox is an epidemic, and conforms to the law of unhealthy locality, as does cholera, and its predisposing causes must be dealt with locally. The vaccinator's lancet has no power over them." —(p. 139).

"While calling attention to this matter [deficiency of infant vaccination] we cannot, however, overlook the epidemic character of smallpox in these provinces, which has to be dealt with in the same way as must be followed with all epidemics, by the more complete removal of local disease causes, and by the general improvement in the life conditions of the population as a whole, and more especially in the care and management of infants."—(p. 190).

In the report for the next year (1884) the Commissioners say :—

"The great predisposition to smallpox epidemics in Madras Presidency must be met by strenuous endeavours to improve the sanitary condition of the population. The facts in the present Report show how small is the influence of vaccination in warding off smallpox when the predisposing epidemic causes are put on one side."—(p. 164).

* * * *

"These remarks are not intended to call into question the utility of vaccination. But in presence of the facts the question is a perfectly relevant one, namely, whether dependence can henceforth be placed on vaccination as a protection against a smallpox epidemic? The question of course answers itself. In ordinary years lives are no doubt saved, and lower smallpox death-rates may be co-existent with numerous operations. But this and similar experience appears to show that the remedies, if such be available, will have to be extended beyond vaccination, and will have to deal with epidemic causes affecting localities and their inhabitants. If sanitary work be neglected, no more dependence against smallpox epidemics can be placed on vaccination than can be placed on quarantine against invasions of cholera. The true remedies lie elsewhere altogether" (p. 203).

Fair-minded people will surely say: "If this is the best that its friends can offer in its defence, the annihilation of vaccination ought obviously to be an easy task." Why is it anything but easy? The answer is simple. The public and its leaders, for the most part, blindly follow the blind High Priests of Jennerism. They are ignorant, and many seem content to be ignorant, of the absurdly fallacious character of the claims made on behalf of vaccination by the large body of men who are pecuniarily interested in its maintenance and defence. It is true that the remedy is simple—"put the people right." Our League exists to promote it. It is also as tedious as it is simple, and as thankless as it is tedious.

"There is nothing more thankless than the attempt to influence any field of public action or opinion. If you fail you are a forgotten fool, but if you succeed you are by no means a remembered wise man. Everybody thinks as you once were alone in thinking, but everybody thanks himself and not you for the acuteness or wisdom of his thoughts, and no one can bring himself to believe that what is now the easy and obvious property of all was once the perilous and toilsome discovery of one."

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COST OF VACCINATION IN INDIA.

THE cost of vaccination in India during the year 1908-09 is given in the "Report on Sanitary Measures in India, in 1908-09" (vol. xlii.), as follows:—

Province..	Total cost.	Cost per successful vaccination.
Bengal	£14,515	1 7/12 d.
E. Bengal and Assam	7,374	1¼d.
United Provinces	11,842	2 1/12 d.
Punjab	7,651	3 1/12 d.
N.W. Frontier ..	838	2 4/12 d.
Central Provinces { British	4,400	2d.
Central Provinces { Native	432	1¼d.
Madras	21,450	3 5/12 d.
Coorg	187	5d.
Bombay	21,825	8 4/12 d.
Burma	9,990	7 5/12 d.
Ajmer-Merwara ..	198	3 2/6 d.
Total ..	£100,702	2 5/6 d. (mean cost).

The total number of vaccinations covered by the above table is approximately 8,530,000, and the mean number of operations performed by each of the 5,660 operators was 1,507.

It is interesting to compare the fees paid for public vaccinations in India with the fees paid to Public Vaccinators in England. The *minimum* fee fixed by the Local Government Board for each vaccination performed by a public vaccinator is 3s. 6d., i.e., more than twelve times the mean cost in India. The mean cost of each public vaccination in England is about double the minimum fee authorised by the Local Government Board.

COMPULSORY VACCINATION IN INDIA.

Extract from Statistics of British India (1910), part V., page 121.

"Vaccination is compulsory in all the municipalities and 193 villages and 70 ranges of the Madras Presidency. In Eastern Bengal and Assam it is in force in all municipalities except Barpeta and also in Sibsagar and Shillong stations and Jorhat and Golaghat unions. In the United Provinces it is in force in all municipalities and cantonments, but its provisions have been enforced in different places with varying degrees of stringency. The Vaccination Act was amended during 1907-08, so as to make it applicable to notified areas in these provinces, and steps are being taken to apply it to these areas gradually; in 1908-09 the Act was applied to 35 notified areas. Vaccination is compulsory throughout the administrations of Ajmer-Merwara and Coorg. As regards other provinces the number of towns or municipalities where the Act is in force is noted below:—

Burma, 45 towns out of 52; Bengal, 128 towns out of 142; Punjab, 31 towns out of 171; North-West Frontier Province, 9 towns out of 20; Bombay, 102 towns out of 199; Central Provinces, 50 municipalities out of 59."

VACCINATION—AN EXPLODED FAD.*

By Mr. Kaikhushru J. Tarachand, B.A., Bombay.

WE may not know as much about microbes and anti-toxins as the medicals fancy they know, but we do know how many beans make five, and we are determined to stick to nature and natural hygienic treatment as much safer and more allied to common-sense than the exploded nineteenth century fallacy of Edward Jenner and Co. Over all the empire the cry is growing more and more insistent on the cruel injustice, from medically-ridden authority to long suffering man and woman, over the undoubted error of judgment and absurd superstition of vaccination. Jenner's marble monument in Gloucester was once pointed out by one of Jenner's own descendants as that of a man who had sacrified conscience and self-respect to love of money. His so-called experiments were founded on a mere flimsy tradition, and never even by himself proved to have any scientific foundation. But the medical profession were at their wits' end to get out of their error—inoculation. They had proved to their own satisfaction (or dissatisfaction) that while inoculating smallpox on a healthy individual might give that individual a slight attack of smallpox, yet the same individual might be the centre of infection to others, who might have a severe, even fatal attack. They were, therefore, on the *qui vive* for any possible or probable escape from their awkward position. Jenner, an impecunious, unqualified medical, who was weary of his empty exchequer, and with a wife and family, whom he would fain see in better social and financial circumstances, adroitly wrote a pamphlet about his wonderful discovery (or invention) of cowpox-smallpox. At this epoch the treatment of smallpox was of the most crude and ignorant among civilised humanity. Doctors only knew, or believed, that smallpox was an almost universal disease. They had scarcely an ounce of hygienic knowledge in the profession; therefore, seeing they were ignorant of the whole system by which fevers (including smallpox) are now treated in every civilised hospital, they knew no way of preventing smallpox from destroying the beauty or comeliness of the patient. People dreaded the pock marks more than even death itself. But we must not forget that since better hygienic ideas have been made

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possible in our hospitals, pock-pitting has become almost unknown.

Smallpox has long been aptly called a "filth disaese." In Austria it is still called "the beggar's disease." We can avoid smallpox and all zymotic diseases only by avoiding the dirty habits which bring them about. For do not let us forget Sir Frederick Treves' sensible warning given some years ago—"Remember that the zymotic diseases are nature's beneficent angels, sent to warn us of our errors and our neglect of God's laws written upon our bodies." We make great ado over the breaking of some man-made laws, but we ignore the universal Divine Law as the All-wise Creator has written it upon his physical creation. We may arrest the "beneficent angel" in the work of purification, by inoculation and vaccination, but in the end—and the end is often very, very speedy—we learn that nature is divinely unchangeable, and that as we have sown, so shall we reap. The more we interfere with nature—*i.e.*, the more we hinder our vital powers in restoring us to normal conditions—the harder it is to overcome the disease which has upset us. Very many who have passed through smallpox have been restored to better health than they had previously, because inherited conditions have been cleared off with the accumulated waste material. But where smallpox has been the result of vaccination, the attack has been more severe—even fatal. In Leicester, in 1903, while the pro-vaccinists in the profession were anxiously expecting to see that poorly-vaccinated city a prey to the epidemic of smallpox (introduced from a well-vaccinated town), the medical officer would have had no difficulty in checking the disease at once by isolation of the first patient. But the first cases were diagnosed as chicken-pox, allowing the disease to be spread over the place before it was recognised. Then the panic-stricken medicals strove to frighten everyone into vaccination, and this was done in so many cases that the infection was spread and kept alive long after the original cases were lost sight of. Even so, the case-mortality was the lowest on record. But it is not the people who die of smallpox, or the people who die of vaccination, that have the worst of this awful affliction; it is the people who are obliged to live after vaccination, degenerated, unhealthy, and handicapped for all their lives. Why is cancer become so common? Why are consumption and paralysis become so common? Why are epilepsy and St. Vitus' dance become so common? Why can we scarcely see a complete set of teeth in our young men and women? They who have looked into this—not only anti-vaccinists, but experts interested in their own special work—have one and all agreed that the main cause is vaccination.

Now we come to the so-called "pure" calf lymph. What absurdities are published on this subject only they who are making it a special study can understand. There is no pure calf lymph. If it were quite pure it could not do what Jenner promised it would do—protect the individual "ever after," even if he slept with a smallpox patient, Jenner said even pure cowpox would not protect; it must be horse-grease cowpox, or it was of no use. Yet, what is now used? Who knows, or knowing, will own to the fact? Here is an account of what a vaccine expert once did. He got some smallpox scraped from some smallpox patients and vaccinated some monkeys; then when this pure smallpox vaccine "took," he scraped some poor calves and vaccinated (*i.e.*, smallpoxed) them. Then he used this "pure calf lymph," which he had manufactured from the monkeys, plus the smallpox patients, and then he vaccinated some poor children! They were only paupers, so who was likely to care if they lived or died. Another time he tried a still more daring experiment. He first procured some smallpox virus, the "pure" smallpox lymph, from some smallpox corpses. Think of it, you who have been taught to, believe in pure calf lymph! Like the house that Jack built, it was first,—This is the smallpox corpse—This is the lymph from the smallpox corpse—This is the monkey that was vaccinated and inoculated from the lymph that was scraped from the smallpox corpse—This is the calf that was vaccinated from the monkey that was inoculated with the "pure" lymph from the smallpox corpse—This is the calf that was vaccinated from the monkey that was inoculated from the smallpox corpse—This is the pauper's child that was vaccinated from the calf that was vaccinated from the monkey that was inoculated from the smallpox corpse, and so on *ad infinitum* and *ad nauseam* and *ad absurdum*.

Whenever the law making vaccination compulsory is repealed—whenever vaccination is left, like other medical opinions, to stand on its own feet—then we shall find the medical profession denounce vaccination in the same ratio that they have denounced the drugs and treatment of the eighteenth century. While vaccination remains a medical endowment we may wait in vain for all but a few honest-minded doctors to give it up. Vaccination, endowed by Government, provides endless well-paid posts for doctors. Vaccination left to the public freedom would die out—as many of its fellow-crudities have died out—in the face of wiser, clearer opinions and ascertained facts.

The Royal Commission on tuberculosis has proved what has been known to anti-vaccinists for many years, that disease can be and has been transmitted from beast to beast, and from man to beast. Why not carry out this logical process and say that it can be and has been transmitted from beast to man? The calf may appear to be healthy. It may be killed and may show no disease. But the disease may be there in germ, and this germ is passed into the child, or the adult, with germs of tuberculosis or anthrax or foot-and-mouth disease, which is but a form of syphilis, and which cannot be differentiated from that dreaded disease. For when the child dies from vaccination it is usually decided that it is erysipelas, or fits, or diarrhoea, but no, no, not vaccination—that would bring discredit on vaccination. Many of us have seen victims of vaccination—men and women whose parents and grandparents were clean, good-living citizens—living a life of suffering from numerous abscesses, for months or years in the hospitals—good object lessons for the students—then dismissed as incurable, or paralysed beyond all medical help, or prepared as inmates for our consumption sanatoria. Why do we not insist on the arrest of this mad scheme of medical ignorance? Why go on manufacturing objects of charity, instead of sanely and healthily educating men and women in a knowledge of how to live in obedience to the laws of God? Shall India at last claim the right to keep her children as they have been born?

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THE PRACTICE OF VACCINATION.

By Mr. S. K. Chowdhri.*

IT is too late now after the practice of vaccination has stood the test of a century—many centuries, in fact, if the primitive method of vaccination prevalent in some parts of India be taken into consideration—to cry down this effective method of preventing smallpox. Notwithstanding the opposition by a small section of people in European countries vaccination has flourished successfully in those parts, and it is to be hoped that in India also despite the preachings on "hygienic knowledge" its cause will not suffer materially. Epidemics of smallpox have become very rare indeed in Europe, thanks to vaccination, and it is generally admitted that they are not nearly as frequent in this country as they were before the systematic practice of vaccination was introduced here.

Nothing is easier for a layman than to sit in judgment over the doings of members of the profession whose sole business it is to study the sciences concerning human diseases with a view ultimately to alleviate the sufferings of mankind. He perhaps thinks that because he has been subject to some diseases himself, or has seen certain others in his friends, or more than that, he has watched how medical men treated them, he knows all about the theory and practice of medicine, surgery and allied sciences. He is not merely content with this knowledge, he thinks he is competent enough to advise in matters medical. It is not a matter for surprise that sometimes, if he possesses tact, he gathers around himself an admiring clientele among whom he begins to practise. It will be a bad day for him when the act of medical registration is passed in India. It is rather amusing to see that capital has been made of Jenner being "unqualified" in a country where no more value is attached to qualification than non-qualification in European countries, and where cheap reputation acquired in curing diseases somehow becomes an important asset. It is common enough to find such self-styled physicians earning more money by deceiving a foolish public. But that is another story.

The writer of the "Exploded fad" would not have burst out in the way he has done had he had occasion to visit a bacteriological laboratory and see what is done there—I would strongly advise him to study an elementary work on bacteriology, preferably under the guidance of a medical friend,—if he had one!—and to accompany him to the laboratory in order to obtain first-hand knowledge. I can assure him that the knowledge thus gained will be less nebulous than that which he at present possesses about zymotic diseases. In the laboratory he will see a strenuous band of workers busy with the microscope, incubator and many other appliances, engaged in adding every day to the store of professional knowledge,—not empirical, but rational,—and thus contributing to the amelioration of suffering humanity. If he is anxious to learn before rushing into print with his crude and unassimilated ideas, he will know better than that syphilis, tuberculosis and cancer are mutable one into another by force of natural law. The "Universal divine law" that he talks of is not the monopoly of a few individuals, and it is not wise to hint that the majority of medical men,—and almost all of them honestly believe in vaccination—are a force employed to counteract one of the blessings conferred by God on mankind.

Nobody disputes the proposition that insanitary conditions are not conducive to health and that they always have an enfeebling, devitalising effect on the body. This prepares the way for the invading bacteria, and when the vitality is lowered their onset cannot be resisted successfully. To fail to understand this simple truth and make vaccination responsible for originating all diseases can only be the result of prejudiced judgment.

Now a word or two about the much maligned calf lymph. Now-a-days, the glycerinated calf lymph is used more extensively in India than hithertofore, in preference to other varieties of the virus. It can be produced absolutely free from the various streptococci and staphylococci, *i.e.*, varieties of bacteria which are usually to be found in the untreated calf lymph. In like manner the germ of erysipelas if it was originally present in the lymph material is rapidly killed out by the germicidal action of the glycerine. The tubercle bacillus is eventually destroyed by glycerine even when large quantities of virulent cultures have been purposely added to the lymph. The possibility of inoculation of syphilis is eliminated as the calf is not subject to this disease. When the glycerinated calf lymph is not employed, every possible care is taken in vaccinating from arm to arm or direct from the calf that the subjects from which the virus is taken are healthy.

I will conclude by referring to the attitude taken by the Anit-vaccinist writer towards the medical profession. It is the only profession which alleviates physical suffering and does it at a poor recompense; it is for this profession alone to promote the cause of preventive medicine while fully aware of the contingency—not a very remote and bright one—that with the progress of this branch of medicine men and women will be healthier, and they will pay the less for the services of medical men. Those people in whom gratitude is not a strong point often forget that they have been benefited by members of the profession at some period or other of their lives, or will be benefited when afflicted with infirmity and disease.

*Reprinted from *The Hindustan Review*, October and November, 1910.

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VACCINATION—AN EXPLODED FAD.

By Miss L. LOAT, *Sec. National Anti-Vaccination League, London.**

THE statements, made by Mr. S. K. Chowdhri in a recent issue of this review regarding vaccination, show that the writer has not studied the subject very closely. He begins by stating that vaccination has stood the test of a century, and identifies the practice of inoculation with Jenner's vaccination, and goes on to state that in this way the practice of vaccination has stood the test of many centuries. Taking the point as to the identity of vaccination with smallpox inoculation, Jenner's original cowpox was a totally different substance to the virus used in smallpox inoculation. Jenner called it smallpox of the cow, but Creighton's and Crookshank's researches have proved beyond any shadow of a doubt that it had no connection whatever with human smallpox, but was apparently allied to a far more terrible disease. We must therefore dismiss the old practice of smallpox inoculation from our minds when considering what vaccination has done, and only regard the experience of the past 100 years. England and Wales form a country where vaccination has been as widely practised as anywhere in the world. The statistics, therefore, of this country are sufficient for our purpose, and if they show that Mr. Chowdhri's statement is incorrect, all reasonable men must agree that the anti-vaccinists are right in fighting for the repeal of the compulsory clauses of the Vaccination Acts all over the world. What then do the English figures show? Vaccination was introduced to the world by Jenner in 1798; in 1840 an Act was passed providing vaccination at the public cost for every one, and making smallpox inoculation a penal offence; in 1853 vaccination was made compulsory; and in 1867 a very stringent compulsory Act was passed. It was not until 1898 that the Vaccination Acts were made less stringent by the introduction of the conscience clause. Vaccination, therefore, has been practised in England since 1798, even the poor could undergo the operation since 1840, and since 1853 every person born has had to be vaccinated until the year 1898 when conscientious objection was at last allowed. As a matter of fact, these various Acts secured the vaccination of 90 per cent. and upwards of the available children until the year 1889. In the year 1871, Mr. Simon told the Select Committee inquiring into the Vaccination Act of 1867 that he believed that 97½ per cent. of the population of London under 50 years of age, excluding infants, had either had smallpox or been vaccinated. He also said that he believed that in 1853 practically all the adult population of the country had either had smallpox or been vaccinated. These statements show how thoroughly well vaccinated England was prior to and up till the year 1871. We have the Government's own statistics from the year 1872 which show that—

In 1872, 94 per cent. of the available children were vaccinated.
In 1873, 94¼ ditto ditto
In 1874, 94½ ditto ditto
In 1875, 94.6 ditto ditto

and so on, and it is not until the year 1889 that the percentage drops to 88.7. Surely, if vaccination had been the wonderful protection against smallpox it is represented to be, smallpox ought to have practically vanished from the country in face of such an enormous amount of vaccination. But what do we find 70 years after the introduction of the practice? The worst small-pox epidemic of the century. In 1871, the mortality per million persons living from small-pox was no less than 1,012. I will give here the annual mortality rates for the whole of the years from 1859 to show what a terrible epidemic it was which struck the country in 1871. The figures are as follows:—193, 136, 64, 78, 286, 364 301, 139, 114, 91, 67, 113, 1,012, 821; 98, 88, 35, 99, 173, 74, 21, 25, 119, 50, 36, 82, 103, 11, 19, 37, 1, 0, 2, 15, 49, 27, 7, 17, 0, 8, 5, 3, 10, 75, 23, 15, 4, 1, 0, 0. The last year here represented is 1908, the Registrar-General's returns not giving later years yet.

But to proceed with the English experience further, from 1889 onwards till 1898, vaccination declined. The percentages of available children vaccinated for the years 1889-1898, inclusive, are as follows:—88.7, 87.1, 84.8, 83.1, 81.5, 78.2, 76.5, 74.0, 70.3, 69.3. In 1898, nearly one-third of the children born remained unvaccinated. Contrast the smallpox death-rate for that year with the rate for 1871, when so few remained unvaccinated. The rate for 1898 is only 8 against 1,012 in 1871. But in 1899 and in 1900 the percentage of vaccinations increased, owing to the introduction of the domiciliary visit system under the Act of 1898, and, in direct contradiction to the assertions of the pro-vaccinists, smallpox broke out, and in 1901 and in 1902 the death-rate rose, as a reference to the figures given previously will show, to 75 per million living. Surely, these and the other figures given show that outbreaks of smallpox are connected with some other cause than vaccination or the lack of it (unless it is true that vaccination itself may start a smallpox outbreak as some people believe), and that the test of a century's practice of vaccination has proved it to be a broken reed in the matter of protection against smallpox.

Next, I will take Mr. Chowdhri's reference to European countries generally. He asserts that, thanks to vaccination, epidemics of smallpox have become very rare in Europe. I do not know what the general idea of an epidemic is, but if we in England had as much smallpox as well-vaccinated France and Italy have had during the past ten years, we should begin to look into the matter. There are very few anti-vaccinists in either of those two countries, and their vaccination laws provide not only for primary vaccination but also for the repetition of the operation. The Registrar-General publishes the number of smallpox deaths in the large towns of France, the population of these towns numbering from 13¾ to 14¼ millions during the years 1901 to 1907, for which years the smallpox deaths were as follows:—1,017, 2,553, 2,350, 735, 292, 562, 2,453. For Italy with a population of from 32½ to 34 millions, the smallpox deaths from 1901 to the latest year for which the returns are out (1908) were:—3,396, 2,413, 6,049, 3,093, 482, 169, 451, 559. In, comparatively speaking,

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badly vaccinated England we have to go back to the year 1881 before we find over 3,000 deaths from smallpox occurring in a population of 26 millions. In Spain, too, where we hear of no opposition to vaccination, there have been 38,000 deaths from smallpox from 1900 to 1908, inclusive.

Now I come to Mr. Chowdhri's statement that epidemics of smallpox have not been so frequent in India since the introduction of vaccination. If Mr. Chowdhri would study the vaccination reports for the different provinces he would see that a great deal of the smallpox in former years has been directly traced to the practice of inoculation, and the Government have gradually been suppressing this as far as they can. In the last report on Sanitary Measures in India (for 1908-09) we are told that an Act was passed during that year prohibiting inoculation in Burma. Referring to the Burma Vaccination Reports we find that outbreaks of smallpox and deaths from the disease have been directly traceable to professional inoculators. Here is absolute proof that the former practice of inoculation actually caused epidemics, and now that the Government has stopped the practice in so many parts of India, is it not natural to expect, without any other event, that smallpox would decline? But has smallpox really declined in India to any great extent? From 1883-4 to 1907-8 the following were the percentages of vaccinations performed in British India, as extracted from the last Government Report:—23.2, 24.25, 25, 24.93, 25.9, 26.3, 27.2, 27.5, 26.4, 26.9, 27.9, 29.7, 30.4, 32, 30.9, 31.4, 38.1, 33.9, 32.8, 39.1, 39.6, 42.5, 43.8, 42.6, 43.7. A steady increase in vaccination is here shown, and in the 25 years the number of births vaccinated has nearly doubled. But this by no means indicates the amount of vaccination done in India. In the last five years for which the returns are published, over 16 millions of children over one year and under six years were vaccinated, so that it is apparent that the percentage of children who survive of those remaining unvaccinated under one year of age is greatly reduced in the following years, and the actual number remaining unvaccinated altogether must be very few, seeing the enormous infantile general death-rate. Now contrast these figures with smallpox death-rate. I give the figures from 1880, *i.e.*, the smallpox death-rate per million living in British India:—377, 386.6, 396.7, 1168.1, 1695.6, 398, 241.5, 304.4, 452.1, 645.7, 594.5, 449.5, 433.7, 295.7, 196.8, 206.5, 642.3, 753.8, 262.6, 233.1, 406.1, 398.5, 511.1, 413.1, 244.1, 314.3, 484.6, 460, 754. These figures show that the death-rate in 1908 from smallpox was higher than in any year since 1884. How can it be maintained that vaccination has caused a decline in smallpox in India, in face of these official figures?

Next as regards the question of laymen sitting in judgment on doctors, does not Mr. Chowdhri know that the vaccination question can only be decided by an investigation of the experiences of those countries which have adopted the practice? Pro-vaccinists have everywhere to turn to statistics to try to prove their contentions, and surely doctors have not a monopoly of statistical ability! The doctors themselves own that there is no scientific foundation for vaccination, but they point to its results. Laymen can at once step in and study those "results" if they have brain and commonsense, and if their studies lead them to the belief that the doctors have all along been wrong in advocating vaccination, they have a right to say so, for what are doctors for, after all? Are they not trained so that by their closer acquaintance with diseases and disease causes they may help the people in their desire for health? If practical experience and the public records prove that the doctors are mistaken in any of their beliefs, the general public have a right to sit in judgment on the men whom they have entrusted with the care of the public health.

Then as regards bacteriology, Béchamp was the discoverer of those minute forms of life which we call bacteria, but modern scientists have twisted his theories into totally different suppositions to those he put forward with so much reason and after so much careful investigation and experiment. Bechamp did not believe in vaccination at all. He believed that bacteria only become dangerous when the conditions of life are wrong, and to prevent them degenerating into poisonous germs, he taught that fresh air, cleanliness, and the observation of Nature's laws generally would suffice. Sir William Collins has preached the same lesson often, and English leaders of medical opinion now and again show signs that the same ideas have come to them. The medical profession, generally, however, clings to the idea that it is the germ itself which causes the disease, and refuses to acknowledge that the real cause is the condition of life and the nature of the patient's surroundings. G. W. Steven's book "In India" gives a vivid picture of the conditions of life in the native quarters, and his commonsense view that the plague was spread through the awful overcrowding, dirt, and lack of light in the Indian towns is now shared by most of the more enlightened Indian officials. The plague germ would not have become dangerous, according to Béchamp, if the conditions where it occurred had not been so bad. As for the work done in laboratories being of benefit to suffering humanity, there is very little proof of this as yet. Take the investigations which have now been going for years into the cause of cancer. Hundreds of thousands of pounds have been spent in England on this work, but the investigators are no nearer a solution of the matter than they were when they started.

Lastly, I must say a word as to glycerinated calf lymph. Glycerine, we were told in 1897 by the "Indian Lancet," is a nutritive medium for the growth of putrefactive and other germs. Glycerine then was the same as it is to-day. And to prove that glycerinated calf-lymph is capable, not only of injuring the persons vaccinated, but of killing them, I may point to the statistics of the English Registrar-General, who records 232 deaths of infants from "Cowpox and other effects of vaccination," from 1899 to 1908, 1898 being the year the use of glycerinated calf lymph by public vaccinators was made compulsory. An average of 23 deaths a year officially acknowledged to be through vaccination, means a very much larger number really due to the operation but concealed under some other name, and an enormous number of cases also which do not end in death. To prove that many cases occur which are really due to vaccination but are put down to some other cause, I may

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mention that within the last few weeks a child at Wavertree, near Liverpool (England), died from the effects of "generalised vaccinia," and at the inquest it was stated that the lymph was too active, and yet the jury's verdict was "Death from natural causes!" As for syphilis not being communicated by calf-lymph, cases have occurred in which a condition has resulted from vaccination with calf-lymph which could not be distinguished, even by a surgeon trained in the study of the disease, from syphilis itself.

I may add that I am fully aware that most doctors are doing their work nobly and unselfishly, but they are absolutely mistaken in their views on vaccination, and they go blindly on refusing to study these matters for themselves. The ordinary general practitioner admits that when studying for the medical profession he had far too much to do to trouble about going into the vaccination question for himself. He merely learnt how to vaccinate, and left the rest for his leaders to decide. If they told him vaccination was a good thing, he accepted their word, but as for any real acquaintance with the subject, a few minutes' conversation with the average doctor proves how little he knows about the matter. But my quarrel is with those who know vaccination does not protect from smallpox, who have themselves come in contact with deaths from vaccinated smallpox and who have seen injuries from vaccination—and yet still mislead the public with cooked figures and untrue statements.

THE ANTI-VACCINATION CAUSE IN INDIA.

(Reprint of article from *The Vaccination Inquirer*, February, 1910.)

We regret that the extreme pressure upon our limited space has prevented earlier reference to the growing scepticism as to the merits of vaccination which is being evinced in various parts of India. The evidences of that hostilty are manifold. An unintended example of such evidence is provided by Major James' recent defence of vaccination For a hundred years cowpoxing has been foisted on the people of India, on the strength of British authority and Western prestige. The growing enlightenment of India in sanitary and scientific matters shows signs of revolt. The failure of vaccination to achieve one tithe of the merits claimed for it, is becoming patent on every hand. Indian commonsense is beginning to mutiny. Hence the appearance of Major James' feeble attempt to sweep back the rising tide of scepticism. It seems likely that English experience will be repeated in India, and that the Major's defence will serve rather to injure than build up the cause he has espoused. Its glaring impartiality, and confessedly one-eyed treatment of the subject, are bound to arouse wide criticism and discussion. Hence anti-vaccinists may well be glad that the book has appeared. Vaccination cannot be discussed without being discredited.

We especially desire here, however, to dwell upon the satisfactory character of the positive evidences of the spread of anti-vaccination in India, which have reached us during the past few months.

Bombay leads the way.

There is some appropriateness in the fact that the first town in India to adopt vaccination and to enforce it by law, viz., Bombay, should now lead the way in providing citizens prepared to do battle in the cause of health and liberty.

Mr. K. J. Tarachand, B.A., of Bombay, has rendered special services to our cause by means of the powerful and persuasive letters which he has sent to "The Parsi" and other influential Indian papers. These criticisms of the "great delusion," have been so accurate in their facts and so telling in their conclusions, that we cannot call to mind a case in which the vaccinators have dared to challenge the one or debate the other. Unlike Major James, they have considered a cowardly silence to be the better part of valour.

It is gratifying to notice that the seed sown by Mr. Tarachand in this way is bearing fruit in the editorial columns of "The Parsi" as witness the following spirited paragraph from a recent issue:—

"Methods of Barbarism."

"There are some complaints, trifling enough in themselves perhaps, but whose continued neglect is extremely annoying, and leads to some scepticism among the ignorant as to the goodwill of an authority, which, with power to give an instant remedy, steadily refuses to do so. Such an one is the vaccination on both arms of infants by the official vaccinators. Some zealous ass must have been struck with the brilliant idea that twice as much vaccination would confer twice as much immunity, and accordingly gave the absurd order to lance left and right, which has now become a law of the Medes and the Persians. Commonsense should be enough to make any vaccinator understand that the multiplicity of his punctures only obviates the chance of some missing fire, and that so long as one "takes," nothing further can be desired. If three punctures are not sufficient, either the lymph is useless or the patient is recalcitrant, and thirty would be equally unserviceable. This notwithstanding, it is the absurd practice to puncture both arms, with the effect that mother and child have an extremely uncomfortable time for the next fortnight. The child gets both arms inflamed at once, and not only can it not lie in any position without discomfort, but it is difficult to lift it without causing acute pain. Among the poor, where clothes are scanty and floors dirty, the risk of blood-poisoning is greatly increased by this absurd practice. If a member of Council experienced such discomforts we should soon hear about it, but as the victims are only babes of the poorer classes (and to some extent their mothers) it seems to be nobody's business to care for such a trifle." ("The Parsi," 19th December, 1909).

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It is safe to say that if and when the writer of the foregoing paragraph comes to grips with the vaccine quackery things will hum.

The "Gujarati Punch," another Bombay paper, inserted a long article in its issue of the 14th November, entitled "Evils of Vaccination" by "Cyrus," followed by another article headed "Vaccination and its advantages," by a "B.Sc., L.M. and S," in which the *pros* and *cons* of the question were fully and forcibly discussed.

In addition to his press work, Mr. Tarachand is endeavouring to arouse the interest of members of the Bombay Legislative Council in the matter with a view to a discussion in the Council.

Another Bombay friend of our cause (Mr. Labhshankar Laxmidas of Junagad, Bombay), has addressed two excellent letters against vaccination to the Chief Secretary of the Government of India. In the first letter dated 19th January, 1909, he drew attention to a number of extracts from "Why Vaccinate?" by Mr. Harold W. Whiston, and concluded as follows:—

As this is a question affecting the health and happiness of thousands of human beings, I pray that your Government may be pleased (1) to stop vaccination in India for five years as an experimental measure; (2) to employ the vaccination staff during that period in extensively carrying out sanitary measures throughout the country; and (3) to engage one or more English doctors selected by the National Anti-Vaccination League, London, as travelling lecturers to explain to the people how in the town of Leicester "smallpox has practically vanished, although they have rejected vaccination for nearly twenty years." If your Government will kindly grant my above prayer, they will earn a multitude of blessings.

In the second letter, dated 27th November, 1909, Mr. Laxmidas appeals against forcing vaccination upon school children. The letter opens as follows:—

Having learnt from the Surat news column in yesterday's "Akhbar-i-Sodagar" (Bombay) that some Government officers have been trying to get an order passed to force vaccination upon children as a condition for admission to school, I respectfully beg to draw your attention to the following extracts:—

He then gives a list of cases of deaths of children after vaccination and other particulars proving the dangers of the operation and concludes as follows:—

I therefore pray that your Government may be pleased to consider the risks to human health from vaccination, and to order that no boy or girl in this country shall be required to be vaccinated as a condition for admission to any school or college. "Blessed are the merciful, for they shall obtain mercy."

Both letters have been printed for distribution. We trust they will have a wide circulation.

The Movement in Calcutta.

As might be expected, Calcutta (the headquarters of the Government in India), lags behind Bombay in its opposition to vaccination, though our readers will remember (see "THE VACCINATION INQUIRER" for April, 1909), that the epidemic of smallpox which occurred there last spring was attributed to "a growing aversion to vaccination among a certain section of Bengalis who have been influenced by the literature of the Anti-Vaccination League of London."

"The Calcutta Journal of Medicine" (the leading Homœopathic Journal of India), inserted a letter from Mr. Gane in its issue of August, 1908, and commented upon it in the following terms:—

"We have written many times with regard to the unsuccessful efforts to prevent smallpox by vaccination. The whole of the orthodox school (allopathy) supports the Government in this chimerical practice, and our single-handed effort has produced no good result. The Bengal Vaccination Act was introduced in 1880 and after twenty-seven years of working the same futility prevails. Further, it is compulsory against the wish of many sober thinkers. Government as a pretended guardian of health, unknowingly seeks to undermine it."—C.J.M.

Those anti-vaccinists, who are believers in homœopathy, will be pleased to note that the Calcutta leaders of the system are inclined to adopt a more vigorous attitude of opposition to vaccination than has been recently displayed by their British and American brethren.

A Friendly Editor.

We are pleased to be able to record that our cause in the neighbourhood of Calcutta has another powerful ally in the Editor of the "Eastern Bengal and Assam Era." He readily inserted the letters sent by Mr. Gane to the Indian press in 1908, and subsequent letters from Dr. Haughton, Miss Loat, Mr. J. R. Williamson and others. He has also not hesitated to express his own utter condemnation of vaccination, inoculation and all such practices.

In his issues of the 15th and 18th December, last, he inserted the whole of the article by Miss Loat (which appeared in the October, 1909, number of "THE VACCINATION INQUIRER,") on the failure of vaccination to protect English soldiers in India. In a note at foot of the first instalment of the Article the Editor said:—

"We have reproduced only part of Miss Loat's letter, a portion being reserved for next Saturday's issue, but so far as it has gone, there cannot be a doubt that her statements are unanswerable, and if so, what becomes of any arguments advanced by pro-vaccinists? As far as figures are concerned, they have not standing ground, and it must be admitted that Miss Loat's statistics can be officially confirmed or disproved. No one can gainsay that for service with our Indian army, recruits are selected with great care and after severe medical tests, and that rejection is certain where even a suspicion of a taint exists. If then, amongst so soundly healthy a body, physically and organically, a higher rate of mortality is recorded than amongst all sorts, ages and classes of men, women and children in England, a goodly proportion actually suffering from maladies of all sorts, as we know must be demonstrable in English rural areas, but especially, in crowded cities and towns, we fear that whosoever holds a brief for pro-vaccination cannot have much of a chance against his antagonists, since his own facts and figures may be

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quoted against him, and to his utter confusion and rout. Upon this ground alone, he cannot hold his own. In his contention he is so self-exposed as to be not unlike a fighter, who, divesting himself of his own sword, hands it over to his opponent, leaving himself unarmed and defenceless. Referring to arguments put forward by anti-vaccinists, we admit our prejudice in their favour upon purely logical grounds; but for all that, we will give both sides fair play and an open field, should they desire a literary tournay in these columns. Our own bias is immovable."

We should be glad if our readers would commend this fair-minded attitude to the notice of all the newspaper editors in their respective localities. If vaccination is true its public discussion will serve but to advertise its merits. If it is false the suppression of such discussion is as criminal as it is stupid.

West, North, East and South India speak out.

Space forbids an extended reference to the sympathetic attitude displayed by other Editors in various parts of India. We are sorry, for example, that we cannot find room for a letter which we have received from the Editor and proprietor of the "Awaza-i-Kalk," in the ancient Hindoo City of Benares, in which he expresses his thanks for the contributions on the subject sent to his paper from England and details the harsh manner in which vaccination is enforced in his locality.

Not only in the West, North and East of India is the voice of protest raised. In the South the Editor of the "South Indian Mail" (Madras), and the Editor of "The Indian Patriot," also published in Madras, have opened their columns to the discussion of the subject. The Editor of the last-named paper recently inserted a series of three articles taken from Mrs. Hunter's pamphlet entitled "No More Vaccination," the closing instalment being accompanied by a leading article headed "Vaccination—an Evil," discussing the *pros* and *cons* of the question. Here are some brief extracts from the leader in question:—

"It is in the experience of many of us that vaccination has brought with it perpetual, sometimes incurable, ailments upon the child and, afterwards, upon the man. These ailments, borne with patience before, are protested against, because faith in vaccination is dying out . . . We are, as a nation, opposed to vaccination. It requires the greatest persuasion to be convinced of its good, and the least mishap easily shakes the confidence that was never strongly entertained. It is a common experience in villages, that the inhabitants hide their children from the vaccinator . . .

"Advocates of vaccination might demonstrate the utility of the operation, as our corresponden has demonstrated its dangers, by statistics. But statistics appeal only to the authorities, not to the people. One mishap to an individual, who has undergone vaccination, will have done more against the popularity of the operation than the most convincing of persuasions. Neither are these mishaps so uncommon, although they are seldom published, because of the disposition of our people . . . Even the confidence in authorities and faith in their motives that encourage vaccination have not been sufficient to make it popular or acceptable to the majority of the Indian population. They are opposed to it, as to any departure from old customs and ideals. They are particularly opposed in this instance, because a kind of religious feeling is affected by it" . . .

Altogether the position of our movement in India gives cause for much gratification and hope of future developments. There are signs of the beginning of a national protest, whose gathering force will someday sweep away the tawdry defences of Major James and his fellow apologists "like the chaff which the wind driveth away."

[Reprinted from *The Vaccination Inquirer*, May, 1910.]

THE "Times of India" (Bombay) of the 2nd February contained an account of a conversazione which was held at the Town Hall, Bombay, on the previous Tuesday, in connection with the work of the Bombay Sanitary Association, at which addresses on sanitary subjects were delivered by various experts.

Sir John Muir MacKenzie gave the opening address, and amongst other things commented on "the most indisputable and remarkable success of vaccination," by means of which they had obtained a "very large reduction of mortality even among the very poorest and most ignorant classes of the population."

Curiously enough, the same journal in its issue of the 25th March, also supplies its readers with the following information in regard to the health of Bombay:

"The total mortality in the city, from all causes, was 890 last week, as against 1,091 in the corresponding week of last year. The only remaining unpleasant feature of the situation is in regard to smallpox, which caused 78 deaths last week, as against 15 last year and a weekly average for this season of 49. There were 122 attacks of smallpox."

Smallpox on a Transport.

The "Ceylon Observer" (5th February) states that the ss. "Northbrook," on her way from Calcutta to Karachi with 1,045 troops (with their families) on board put into Colombo Harbour to land four lascars of the ship, who had developed smallpox. The report is eloquently silent as to the vaccinal condition of the men. It does not even state that these were the only men who escaped re-vaccination when the transport left Calcutta.

We are glad to see that "The Parsi" (Bombay) and the "Eastern Bengal and Assam Era" continue to give prominence to letters and articles against vaccination.

Smallpox in Bombay.

Since penning the foregoing paragraphs we have received the following cutting from the "Times of India" (Bombay) of the 28th March, 1910:—

SMALLPOX EPIDEMIC—A WARNING.

To the Editor of the "Times of India."

SIR,—I wish, through the medium of your paper, to draw the attention of the public to the increasing prevalence of smallpox in this city. Within the past week there has been a considerable increase in the number of admissions for

smallpox from the communities which seek treatment at this hospital. From inquiries made of these patients or their friends, as well as amongst the outside public, it appears that protection by re-vaccination—facilities for which Dr. Turner, the Health Officer of Bombay, has not only provided, but frequently notified in the public press—is not taken advantage of either from ignorance, indifference, prejudice or a false impression of imagined immunity owing to the previous vaccination. From my experience at this hospital too many tragedies have occurred in every smallpox epidemic (which may be said to occur annually), to render it wise for any one to leave a matter of this kind to chance. Every one should be re-vaccinated, and not wait until it is brought home by bitter experience.

I may mention that it has always been a matter of surprise to me that firms which bring out young men from Europe do not insist, as a *sine qua non* of employment, on re-vaccination, and, I may add, inoculation against enteric. The health of many and the lives of a large number are lost by neglect of these precautions.

Much might also be done to extend the undoubted advantages of re-vaccination amongst natives if not only Government but all the chief employers of labour—the Railway and Shipping Companies, the Municipality, Tramway Company, Port Trust and all firms of standing—insisted on re-vaccination before employment. Marks of previous vaccination should never be taken into account—some of the worst cases of smallpox have had well-defined marks; only well-marked pits from smallpox should give exemption from the universal rule—re-vaccinate. The advantages of, as well as necessity for, re-vaccination, have been frequently urged by the Health Officer without result, but if, by the conjoined action of all the chief employers of labour, re-vaccination became a condition of employment, a sanitary measure of great advantage to the community would be quietly and extensively introduced.

M. A. T. COLLIE,
Lt.-Col., I.M.S.

St. George's Hospital,
26th March, 1910.

The fiendish spirit of tyranny that pervades this letter is as deplorable as its abysmal stupidity. We do not suppose that this vaccinomaniac has enough brains to understand the question, otherwise we should like him to explain why smallpox is not raging in this country, where the vast majority of the population are unrevaccinated, and why it is never absent from Japan, despite the fact that its population is the most re-vaccinated in the world.

The "Times of India" of the 31st March gives the following further information in regard to the serious character of the smallpox epidemic now prevailing in Bombay:—

"Smallpox, unfortunately, is still creeping up. The deaths are now nearly 12 a day as against 10 per day a week ago. Last week's mortality was 81, as against 31 in the corresponding week of 199 and a five-yearly average, for this time of year, of 51. The number of people attacked by smallpox last week was 126."

[Reprinted from *The Vaccination Inquirer*, June, 1911.]

QUESTIONS IN PARLIAMENT.

On the 25th April, 1911, Mr. CHANCELLOR asked the Under-Secretary of State for India whether an investigation of Indian sanitary and vaccination reports had established the facts that during the past forty years what are known as the badly-vaccinated provinces had suffered far less from smallpox than the well-vaccinated provinces; that the smallpox mortality amongst children was very much lower in the badly-vaccinated as compared with the well-vaccinated provinces, the lowest rate of all being in Burma, where vaccination had met with more opposition than in any other part of India; that, notwithstanding that 88 per cent. of the total vaccinations in India were performed upon children under six years of age, the records showed that on the average 70 per cent. of the deaths from smallpox occurred amongst children under ten years; that the towns in which vaccination was enforced usually suffered more severely from smallpox than the towns and rural areas in which the Act was not enforced; that in the capital cities of Calcutta, Bombay, and Madras there had been an enormous increase in the smallpox mortality during recent years; and that the reports chronicled epidemics of foot-and-mouth disease and other fevers amongst the calves used for cultivating vaccine virus; whether he would recommend that a commission be appointed to investigate the value of vaccination in India; and whether, pending the deliberations and report of such a commission, if appointed, he would consider the desirability of affording similar facilities for exercising conscientious objection to vaccination in India as had been granted in Great Britain?

Mr. MONTAGU: I have seen the articles in THE VACCINATION INQUIRER to which apparently my hon. Friend refers; but I cannot accept their representation of the facts, and do not consider that a case has been made out for appointment of a commission or alteration of the law. He is no doubt aware that vaccination is optional over by far the greater part of British India, including 93 per cent. of the population.

[It will be observed that Mr. Montagu takes care not to challenge the accuracy of THE VACCINATION INQUIRER'S representation of the facts, but merely dismisses it with the bald statement that he "cannot accept" it.

It is doubtless true that vaccination is "optional" over by far the greater part of British India. But that is simply because the officials are able to bribe or coerce the poor ignorant inhabitants in the rural districts to accept it without the aid of a compulsory law. Does anyone believe for a moment that they could succeed in performing nine millions of vaccinations per annum otherwise? If vaccination is "optional" why should mothers hide their children when the vaccine blood-poisoners come on the scene?—ED. V.I.]

SMALLPOX EPIDEMIC (MADRAS).

On the 8th May, 1911, Mr. PICKERSGILL asked the Under-Secretary of State for India whether he was aware that an epidemic of smallpox was then raging in Madras, the deaths from the

beginning of the year having been (according to the Registrar-General's Returns) in January, 40; in February, 60; and to 18th March, 82; representing a fatality rate of 360 per million population; whether he was aware that the official returns of the city showed that during the past few years the annual average number of public vaccinations per thousand of population had been more than three times greater than the number officially recorded as carried out in London; and whether he would ascertain what steps were being taken by the authorities in Madras to cope with the epidemic apart from vaccination?

Mr. MONTAGU: The Secretary of State regrets that the city of Madras is suffering from an epidemic of smallpox. He understands that the Corporation have opened isolation hospitals and that a special staff is employed under the health officer to carry out measures of disinfection and to bring cases to light. Owing to the form in which the Madras vaccination returns are kept, exact comparison with those of London is not possible. As an example I would remind my hon. Friend that re-vaccinations are not included in the London statistics.

[The reference to the vaccination returns in this reply is typical of the *suggestio falsi* style adopted by Government officials for the purpose of misleading Parliament. Although an "exact comparison" between the returns of the two cities cannot be made, it is at the same time possible to make such a comparison as will prove beyond cavil that Madras is a thrice-better vaccinated city than London. Here are the official figures for the past few years in proof of this statement:

City and period.	Primary vaccinations.	Public re-vaccinations.	Total.	Ratio per 1,000 of population.
MADRAS (Population 509, 346*)				
Year ending 31st Mar., 1910 ..	24,109	7,426	31,535	61.9
Average during previous 5 years	—	—	32,643	64.0
LONDON (Population 4,536,267*)				
1908	76,731	4,675	81,406	18.0
Average during previous 5 years	87,543	8,213	95,756	21.1

* 1901 Census.

It will be observed that the foregoing statistics do include the *public* but not the private re-vaccinations for both Madras and London. It is not possible to say what was the number of *private* re-vaccinations in either city, but the omission of these figures in no way affects the substantial accuracy of the statement that Madras is a thrice-better vaccinated city than London.—ED. V.I.]

[Reprinted from *The Vaccination Inquirer* for September, 1911.]

BOMBAY MUNICIPALITY ASKS FOR COMPULSORY RE-VACCINATION.

In the spring of last year Bombay suffered from a severe epidemic of smallpox, the deaths for the year totalling over 1,000 in a population of about a million.

Our readers will better appreciate the significance of these figures when we state that "Bombay has the merit of being the first town in India in which compulsory vaccination was introduced. This was in 1877." (Major James). It is probably the best vaccinated town in India. As far back as 1806, the British public there presented Jenner with £2,000 as a testimonial of their gratitude for his inestimable discovery of the preventive of smallpox. In 1827 what is known as the "Bombay system of vaccination" was introduced. Under this system a large staff of native vaccinators, superintended by British doctors, was appointed to take the "inestimable discovery" to the doors of the people. This system was ultimately taken as the model upon which the improved systems in most of the other Indian provinces were based. Major James says that "by the year 1854 an efficient system of vaccination had been established throughout the Bombay presidency."

The utter futility of the "efficient system of vaccination" is demonstrated by the following table:—

Average Annual Number of Deaths from Smallpox in Bombay City, per million of the Population.

1881—1890	385.8
1891—1900	725.2
1901—1910	849.0

In 1910 the mortality from smallpox reached the very large figure of 1,133 per million, that is three times what it was 30 years ago! One would have thought that the lesson of these figures would have been plain to the Bombay Municipality. Perhaps the figures have never been brought to their notice. It is scarcely possible to imagine, otherwise, that they could have adopted the resolution and report to which we make reference below.

At the meeting of the Corporation held on the 3rd July, 1910, it was resolved, on the motion of Lieut.-Col. Collie (I.M.S.):—

That a committee (named) be appointed to consider, in consultation with the Commissioner and the Executive Health Officer, and report what steps should be taken (1) to popularise, or render compulsory, re-vaccination in the city; (2) to make it incumbent on immigrants of all ages who are not primarily vaccinated to get themselves vaccinated; and (3) to protect generally the city from the frequent epidemics of smallpox. Dr. Collie said this was an important question and it ought to be considered in all its bearings by the committee.

The Hon. Hill Trevor seconded the proposal.

The Hon. Mr. Ibrahim Rahimtulla said that

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the committee should be given greater latitude and should be asked to suggest whether re-vaccination should be made compulsory and what was the best method of making it so. He suggested a modification in Dr. Collie's proposition, in order to make it more practicable.

Dr. Collie accepted the modification suggested by the Hon. Mr. Ibrahim and the proposition with the modification was agreed to.—("The Times of India," 5th July, 1910).

Nothing more was heard of the matter (publicly) until the meeting of the Corporation on the 8th May last, when the report of the Committee was submitted. The following report of the proceedings appeared in "The Times of India" of the 9th May :—

Lieut.-Colonel Collie, in moving the adoption of the report, said : Although this subject is of very great importance, it is unnecessary to take up much of the Corporation's time in moving the adoption of the Committee's report, because there are certain recognised facts relating to smallpox, which, if accepted, leave no alternative to the Corporation but to unanimously adopt the report. These facts are : (1) That primary vaccination gives immunity in the majority of cases for only a limited number of years. (2) That successful secondary vaccination gives practically complete immunity for life. This has been testified in many ways in those countries where secondary vaccination is compulsory, *e.g.*, Germany, and, I understand, Ceylon. We have also the historical example, in which Stanley, on one of his expeditions across Central Africa, having vaccinated every member of his force, passed with impunity through regions devastated with a virulent form of smallpox. Again, I think I am correct in saying that no doctor or nurse who has been successfully re-vaccinated, has ever been known to contract the disease, though brought into the closest contact with it. (3) That in this city smallpox is not endemic, but that annually recurring epidemics of this dread disease are clearly attributed to its introduction by certain classes who are unprotected by vaccination—notably pilgrims and Goans. (4) That every recurring epidemic levies a heavy toll of victims from every class of our community. sensibly increases our death-rate, and leads to a heavy recurring municipal expenditure. (5) That the introduction of smallpox and the disastrous effects on the population, are preventable if we can protect our city from the dangers without our walls, and secure immunity within. Accepting these facts, which I presume no one will question, it is, I think, clear that the Committee's recommendations are reasonable, viz. : (1) Compulsory re-vaccination for the inhabitants of this city. (2) Compulsory vaccination of unprotected immigrants. (3) That the Portuguese Government be asked through our Government to make vaccination compulsory within its territories. Hitherto, we have made every effort that legally lies within our power to meet the dangers of these recurring epidemics, but without success ; it is impossible to prevent them under existing conditions. I therefore feel confident that Government, recognising this, will also recognise that the measures now recommended are reasonable. The recommendation which directly affects ourselves is that of compulsory re-vaccination. Of course, one expects to have a certain amount of opposition, but it is hardly likely to be serious or worthy of much consideration. The extent to which re-vaccination has been voluntarily sought in every epidemic shows a keen appreciation of its benefit ; what is wanted is power to reach those who are too apathetic or ignorant to avail themselves of its protection. The Committee, which is a very representative one, and thoroughly conversant with the feelings of the various communities carefully considered this question and saw no reason why re-vaccination should not be compulsory.

The proposition was agreed to.

Further interesting information as to the contents of the Committee's Report is contained in the following leading article which appeared in "The Times of India" on the 6th May :—

"The report of the special municipal committee appointed to consider the question of vaccination in Bombay deserves warm support when it comes on for discussion in the Corporation. There is now little need to preach the efficacy of vaccination as a preventive of smallpox anywhere in India. Its beneficial effects are thoroughly appreciated by all classes of the population, and the only obstacle that needs be overcome is indifference and neglect. The records of the Bombay Municipal smallpox hospital at Arthur Road show that of the thousands of smallpox patients treated there in the past fifteen years no single one had been re-vaccinated. The Committee now recommend that re-vaccination between the ages of seven and nine be now made compulsory in the city. After due consideration they believe it to be "perfectly feasible to give effect to this proposal without in any way offending the susceptibilities of the different communities." A further most important proposal is that vaccination shall be imposed upon all immigrants. This is in accordance with a policy we have long advocated, for there is no endemic smallpox in Bombay and the annual epidemics are always the result of imported infection, chiefly by the agency of pilgrims from Mecca and Goanese. We may quote the famous remark of King Edward regarding the prevalence of a certain destructive disease—"If preventable, why not prevented" If the Corporation adopt their Committee's report it will be a great step forward in the sanitation of the city, and it is to be hoped Government will not unduly delay in passing the necessary legislation."

Anti-vaccinists will marvel at the effrontery of the recommendation that re-vaccination should be made compulsory between the ages of seven and nine. The annual reports issued by the Sanitary Commissioner for the Government of Bombay show that during the five years of 1904-8 32 per cent. of the 4,084 deaths from smallpox occurred amongst infants under one year of age and 27 per cent. amongst children above one and under ten years of age. In 1909 (the latest year for which figures are available) the percentages were 36 and 48 respectively. It is obvious from these figures that the vast majority of the deaths from smallpox in Bombay take place amongst (presumably vaccinated) children under seven to nine years of age. Where, then, is the sense of re-vaccinating at that period ? To be of any value, *ex hypothesi*, the blood-corrupters should repeat their work at the age of two and thereafter annually until

their victims were vaccinated into their graves.

We are glad to observe that our friends in Bombay are stirring up an agitation against the proposals of the Corporation, and a petition to the Bombay Government has been prepared for signature. The Editor of the "Cherag" and Mr. Labshankar Laxmidas are once more in the van, and several other papers have opened their columns to a discussion of the subject. The "Cherag" for July last contains a reprint of the article on smallpox and vaccination in Bombay which appeared in THE VACCINATION INQUIRER, February, 1911.

A Question in Parliament.

On the 3rd August Mr. LANSBURY asked the Under-Secretary of State for India whether he was aware that the Bombay Legislative Council proposed to make re-vaccination compulsory in Bombay; whether the Governor had received a petition against the suggested law; and whether, seeing that smallpox was not checked in India in spite of the amount of vaccination that is practised there, he would point out to the Bombay Council the inadvisability of enacting a compulsory re-vaccination law and counsel them to take all possible steps to improve the sanitary condition of the city?

Mr. MONTAGU: The Secretary of State is not aware that any such legislation is contemplated.

We gather from Mr. Montagu's reply that the matter has not yet been considered by the Legislative Council.

A LETTER TO EARL CREWE.

Copy of a letter sent by Mr. K. J. Tarachand, B.A., of Bombay (while in London), to the Earl of Crewe.

September 18th, 1911.

MY LORD,—

On July 5th, 1909, a letter was addressed to your predecessor in office, Viscount Morley, on my behalf, by the Secretary of the National Anti-Vaccination League, on the question of vaccination in India, and as I am now visiting this country, I thought it would be an opportune time to return to the subject.

This course I feel it the more incumbent upon me to take in view of the fact that in my native City of Bombay proposals have been recently put forward by the Legislative Council for the compulsory enforcement of re-vaccination, and the Governor of the Presidency has already been petitioned in opposition to the contemplated new law.

Thus we find that whereas in Great Britain there has of late years been a considerable relaxation of the Vaccination laws and also of the Departmental Regulations pertaining to Vaccination, in India much greater stringency is advocated. In England it has been possible to secure exemption for children since 1898; no Bill having for its object the re-vaccination of the people has been introduced into the House of Commons; Territorials are accepted for service in the citizen army even though un-vaccinated; school teachers can now be employed when in an un-vaccinated condition at the option of the local Education Committee, and they are "recognised" by the Board of Education; and Post Office servants are not forced to be vaccinated in order to join that branch of the Government service.

The effects of the operation of Vaccination are the same all over the world, and its partial abandonment in Great Britain, on the lines indicated, has not been followed by any outburst of smallpox, such as the advocates of the Jennerian theory would have people suppose was inevitable. On the contrary, evidence is not wanting—and is, in fact, amply furnished by the Midlands of England—that a practical total neglect of Vaccination is not succeeded by any serious visitation of smallpox. What greater reason, therefore, is there to presume that more vaccination is necessary in India, when an ever-lessening amount is being carried out in England?

Neither do the records of smallpox in Bombay during recent years justify this new proposal for a re-vaccination law. The Annual Reports of the Sanitary Commissioner for the Government show that during the five years 1904-8 there were 4,084 deaths from smallpox, and of those fatal cases 32 per cent. occurred amongst children under one year of age, and 27 per cent. amongst children between the ages of one and ten years. For the latest year available, viz.: 1909, the percentages were 36 and 48 respectively. As it is safe to assume that practically all those victims were vaccinated there should be sufficient proof in that one circumstance alone to demonstrate the absolute futility of vaccination, and the proposal for re-vaccination between the ages of seven and nine years becomes an absolute absurdity.

Sanitary measures are very badly needed, but vaccination is the worst possible sanitation, as it is merely the stamping of disease in in the hope (perhaps belief also) that disease can be thereby stamped out. Experience has indisputably demonstrated otherwise, and that is only what could be expected, for the idea is contrary both to Nature and commonsense.

Trusting your Lordship will see your way to exercise your influence with the view of discountenancing the project outlined,

I have the honour to be,
Your Lordship's most obedient servant,
KAIKHUSHRU J. TARACHAND,
Hon. Indian Correspondent, N.A.V.I.

The Right Hon. the Earl of Crewe,
Secretary of State for India in Council,
India Office, Whitehall, S.W.

A LETTER TO THE GOVERNOR OF BOMBAY.

THE NATIONAL ANTI-VACCINATION LEAGUE,
27 Southampton Street,
Strand, W.C.,
October 6th, 1911.

SIR,—

I have the honour, by direction of my Council, to lay before your Excellency the following observations on Resolution No. 784, dated 8th May, 1911, by the Bombay Municipal Corporation, which recommends that the Bombay Government be applied to for legislation with a view to making re-vaccination compulsory on infant citizens between the ages of 8 and 11, or 7 and 10, and on immigrants of all ages.

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It is scarcely necessary to point out how indispensable it is that all legislation, based on an alleged scientific theory, which is imposed on a population of many diverse races and creeds, should be capable of justifying itself with scientific precision. In this case it is obvious that, in order to prevent the serious discredit of English Administration which would result, if it should be demonstrated that such legislation had been based on false assumptions, it is necessary to show that re-vaccination (1) is a certain preventive of smallpox; (2) that it is innocuous; (3) that the virus with which it is to be effected can be defined accurately and unmistakeably.

My Council submit that none of these preliminary conditions can be maintained. With regard to (1) it can be shown, that re-vaccinated persons take smallpox if they live in insanitary conditions, and die of the disease. A conspicuous instance of this, the case of the German Army, can be given. Re-vaccination of the most uncompromising type has been the rule in that Army since 1834. It will be seen that between 1834 and 1887 there were 7,505 cases and 291 deaths officially recorded: see "A Century of Vaccination," by W. Scott Tebb, M.A., M.D. (Cantab), D.P.H., p. 235. Improved sanitary conditions have succeeded in getting rid of the disease, which re-vaccination failed to avert.

Again, during the Franco-German War in 1871-2, where both armies were equally "protected" by re-vaccination, thousands of deaths occurred. The French Army suffered more than their opponents, because privation, insanitary conditions, and the depression of defeat, lowered their vitality. The proof was conclusive, that re-vaccination was an irrelevant factor.

With regard to condition (2) my Council would point out that even the Royal Commission had to acknowledge, however reluctantly, in their Final Report (1896), par. 409, *et seq.*, that diseases are conveyed in vaccination. In par. 201 of the "Dissent" appended to the Final Report, the fact is alluded to, that all lymph used in vaccination is contaminated with blood. In par. 213, the Dissentient Commissioners go on to make the significant statement, that "when the assertion is made that the *transmission* of syphillis by vaccination is exceedingly rare, it must be borne in mind that the fact that vaccination with calf lymph, and therefore independent of venereal contamination, is capable of evoking symptoms indistinguishable by experienced surgeons from those of syphillis, has only recently been brought to the notice of the profession." My Council would point out, that the English Government in India cannot afford to incur the risk of compulsorily enforcing a surgical operation which reeks with possibilities such as this. The recent increase of leprosy is in itself a reason for special caution, in regard to blood contamination.

In this connection it may be noted, that the marks, so often relied upon to show that vaccination has been effective, and is protective, are due to the failure of the operator to exclude other diseases from the cowpox disease theoretically inflicted by vaccination or re-vaccination. Dr. Monckton Copeman, of the Local Government Board, in 1901 said, in his address to the Royal Medical Chirurgical Society, that: "There can be little doubt that the huge and deep scars which not infrequently resulted from the vaccinations of former years were due to some extent to excessive destruction of skin tissue by micro-orgasinms other than that specific to vaccinia. If this be so, then it becomes apparent that persistence of such large and deep scars practically throughout life does not neessarily afford evidence that any equivalent degree of immunity against the infection of smallpox is enjoyed by their possessor."

Dr. Ricketts, Metropolitan Asylums Board Medical Superintendent, wrote in the *Lancet* in the same year, that: "It may be worth while stating that with any rational treatment of smallpox, scarring is absent in the majority of cases." It follows, that marks of vaccination are due to the operation having been badly performed. Yet their presence is relied on to prove its efficiency. This reasoning is paralleled by the curious line of argument found in the Report of the Committee of the Corporation of the 11th June, 1908. The nostrum of vaccination having failed to protect 2,228 cases admittedly vaccinated (which disprove its efficacy); the nostrum of re-vaccination is to succeed in preventing the disease. My Council consider that reasoning of this description is a questionable basis for aggressive legislation of the type called for by the Municipality.

As to condition (3) it is sufficient to point out, that all efforts to identify a disease germ of either cowpox or smallpox, have failed. The President of the Local Government Board has repeatedly refused in Parliament to guarantee the vaccine issued by his Department. The Grocers' Company in London have in vain offered a reward of £1,000 for the germ of cowpox. The *Lancet* has shown that all the vaccines on the London market are impure; see issues of 28th April, 1900, and 7th June, 1902, in which the horrifying results are tabulated.

My Council would draw your Excellency's attention to the control experiment furnished by the City of Leicester. By substituting sanitation for vaccination, the Corporation have reduced the death-rate from 27 per 1,000 to 12. The excessive death-rate of Bombay, 39 per 1,000, shows that its sanitation is so defective, that epidemics of zymotic disease are certain to occur. This is the experience of Italy, Japan, and other countries in which re-vaccination is enforced, sanitation is imperfect, and smallpox epidemics frequent.

Jenner opposed re-vaccination, as he saw that it discredited vaccination. The theory of vaccinists is, that the infliction of a mild disease, cowpox, will render a person immune to the severer disease, smallpox. But the very fact that a victim of cowpox is not immune from a second attack of that disease, proves that he is not immune from the severer disease.

Taking all these facts into consideration, my Council deprecate the founding of legislative action in India on the quicksand of passing medical theory. The heavy death-rate in Bombay, some 39 per thousand, shows that the sanitary conditions of the City are unsound. It is incumbent on the English Government to remedy these conditions, and not to make the attempt to add forcibly more disease to the drawbacks to health at present experienced by the inhabitants of the City.

I have the honour to be,

Your Excellency's most obedient servant,

(Signed) L. LOAT, *Secretary*.

His Excellency the Governor of Bombay,

Bombay.

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ANNUAL SANITARY REPORT, 1909.

[Reprinted from *The Vaccination Inquirer* for September, 1911.]

Since the publication of our articles on smallpox and vaccination in British India in December, January, and February last, we have received a copy of the Annual Report of the Sanitary Commission with the Government of India (Lieut.-Col. John T. W. Leslie, I.M.S.) for 1909 from which we have extracted the following particulars :—

It appears that in 1909 smallpox was less prevalent among the civil population than in 1908, the deaths being 101,152, representing a death rate of .45 per 1,000 of population, as compared with 170,694 and .75 in the previous year. The greatest diminution took place in the United Provinces and the Punjab. The only provinces showing an increase were Assam and E. Bengal (23,604—9,373), Bengal (38,609—35,966), and Bombay (5,019—2,526).

The total number of vaccinations performed during 1909-10 was 9,090,586, about 30,000 fewer than in the preceding year.

Smallpox amongst British Troops, &c.

The report shows that the following cases of and deaths from smallpox took place amongst British troops, &c., in 1909. The figures for 1908 are also added here—

	1908.		1909.	
	Cases.	Deaths.	Cases.	Deaths.
Officers	8	0	2	—
Men	53	2	19	1
Women ..	36	7	8	1
Children ..	8	1	6	—
	105	10	35	2

The fatal case amongst the men occurred at Fort William (Calcutta). He was a conductor in the Indian Ordnance Department, and the report says that he "had been re-vaccinated 26 years previously." It is also alleged that none of the women attacked had been re-vaccinated. Nothing is said as to the vaccinal condition of the children.

As we have previously pointed out, the official excuses which are made for these cases are both dishonest and stupid, seeing that "in October of each year all men (as well as women and children) are inspected and their medical history sheets examined. Those who do not show either satisfactory marks or records of vaccination are re-vaccinated."

Amongst the native troops there were 43 cases of and 8 deaths from smallpox, as compared with 103 cases and 3 deaths in 1908. The report says that "two of seven patients at Mhow had had an attack of the disease previously, and two had only just joined the regiment and had not been vaccinated." An eloquent silence is observed as to the vaccinal condition of the other cases.

Fifty cases of smallpox, with two deaths, occurred amongst the jail population.

Chickenpox and Cowpox.

The following particulars of cases of chickenpox and cowpox appear in the statistical tables (last year's figures are added in brackets) :—

	Cowpox.		Chickenpox.	
British Troops (men)	1	(4)	1	(17)
Women	—	(1)	—	—
Children	1	(7)	54	(20)
Native Army ..	50	(48)	147	(205)
Jail population ..	16	(6)	447	(647)
	68	(66)	649	(889)

No explanation is given as to why so many "chickenpox cases" occur amongst the native troops and the jail population. No deaths from cowpox or chickenpox are recorded.

In addition to the Annual Sanitary Report for the whole of India for 1909, we have also received the separate sanitary and vaccination reports for that year in respect of the provinces of Bengal, Madras, and Bombay. We regret that we cannot spare space for a detailed analysis of these reports.

The following paragraph in the Sanitary Commissioner's Report for Bengal is interesting as illustrating the blind bias of the Indian "Sanitary" officials in favour of vaccination :—

"35. The statement below compares the mortality from smallpox among infants and children during 1909 with that for the preceding year :—

	1909.		1908.	
	Deaths in—	Proportion per cent. to total mortality from smallpox.	Deaths in—	Proportion per cent. to total mortality from smallpox.
Under 1 year	4,900	12.69	6,028	16.76
1 to 5 years	7,216	18.68	8,668	24.10
5 to 10 years	4,381	11.34	5,230	14.54
Total	16,497	42.72	19,926	55.40

It will be seen that as compared with the preceding year there has been a considerable decline during 1909 in the mortality among infants and children. This happening during two successive years in spite of the increasing prevalence of the disease among the general population, clearly shows that infants and children are being better protected by vaccination against smallpox. The percentage of total mortality among children under ten years of age is still rather high but is steadily idminishing, the ratio amounting to 42.72 during the year under report against 55.40 and 57.87 during the two previous years."

In his comments on the report the Lieut.-Governor says :—

"In spite of the general increase in the death rate from smallpox, the mortality among infants

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and children, for the second year in succession, showed a decrease, clearly proving the value of the protection afforded by vaccination."

Had the Lieut.-Governor taken the trouble to look up the figures for the past few years he would have found that the absolute number of deaths of children in 1908 and 1909 was actually much above the average, and that the low percentage total mortality was merely due to the fact that the number of deaths amongst adults was unusually high. Here are the figures in question :—

BENGAL. SMALLPOX DEATHS.

Year	Under 10 No.	Under 10 per cent.	Above 10 No.	Above 10 per cent.	Total deaths, all ages
1905	4,597	63·73	2,616	36·27	7,213
1906	12,620	56·83	9,586	43·17	22,206
1907	16,822	57·87	12,244	42 13	29,066
1908	19,926	55·40	16,040	44·60	35,966
1909	16,437	42·72	22,112	57·28	38,609
Average	14,992	53·0	12,520	47·0	26,612

SMALLPOX AND VACCINATION IN ENGLAND, INDIA AND JAPAN.

AN INTERESTING COMPARISON.

Period.	Annual Average Population.	Smallpox Deaths. Average No. per annum.	Smallpox Deaths. No. per million of population.	Vaccinations and Re-vaccinations. Average No. per annum.	Vaccinations and Re-vaccinations. No. per 1,000. of population.
ENGLAND AND WALES.					
1868–1877	23,280,700	6,048	259.7	692, 603 (a)	29.7
1878–1887	26,462,020	1,425	54.0	777,670 (a)	29.4
1888–1897	29,613,305	461	15.6	677,495 (a)	22.9
1898–1907	33,205,453	475	14.3	827,817 (a)	24.9
1908	35,348,780	12	.4	(Figures not yet	published).
1909	35,756,615	21	.6	(Figures not yet	published).
INDIA.					
1868–1877	139,150,000	143,601	1032.3	Not recorded	
1878–1887	189,234,000	146,089	771.9	5,000,000 (b)	27.0
1888–1897	206,313,000	96,142	466.0	7,000,000 (b)	34.0
1898–1907	222,500,000	83,216	373.9	8,500,000 (b)	38.0
1908	226,409,600	170,694	754.0	9,123,362	40.3
1909	226,394,326	101,152	447.0	9,090,586	40.1
JAPAN.					
1881–1887 (7 years)	37,823,751	4,757	125.8	2,766,122 (c) (1886-7)	71.3
1888–1897	41,756,045	4,146	99.3	2,266,055	54.2
1898–1907	46,295,949	147	3.2	1,957,969 (c) (1898–1905)	42.8
1908	49,500,000	5,837	118.0	—	—

(a) Excluding *private* re-vaccinations.
(b) Approximate figures, extracted from Major James' Chart, No. XI.
(c) "Well-taken" vaccinations and re-vaccinations only. The actual number of operations was as many again.

MISCELLANEA.

"THERE is scarcely any district in Bengal where there is not some opposition to vaccination in some form or other. Infant vaccination is very unpopular in most parts of the province. Parents hide their children from the vaccinators in the belief that the operation would cause them pain and lead to suffering and disease. In fact, deaths from other causes months after children are vaccinated are attributed to vaccination." (Bengal Sanitary Commissioner's Vaccination Report for the year 1901-02).

"The most severe epidemic of smallpox which has visited the province (Bengal) within the period for which reliable statistics are available, carried off 37,680 persons during 1901. In the district in which it proved most destructive to life, the disease is said to have been spread by smallpox inoculation." (Memorandum by the Army Sanitary Commission on the Report of the Sanitary Commissioner for Bengal for 1901).

"The streets are narrow and are literally used as latrines by children in the day and adults after dusk. Low-built, mud-walled houses, with no proper flooring, in such a dangerously polluted soil, must, of necessity, affect the death-rate of the place. It is literally a case of 'excrement-sodden earth, excrement reeking air, and excrement-tainted water,' and no wonder, therefore, that it is the home of cholera and other

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epidemic diseases." (Administration Report of the Madras Municipality for 1902-03, par. 163).

The General death-rate in Madras City for 1901 was 46.2 and for 1902 42.0 per 1,000 of population.

"Estimating its quality by the influence it has in protecting the people against smallpox, vaccination yielded better results in Madras than in the other great Indian cities. The death-rate from smallpox was only 0.1 during the calendar year 1902, and this was the average for the previous ten years . . . The large number of 1,020 prosecutions under the vaccination bye-laws testifies to the thoroughness with which these laws are enforced in the city of Madras; and to this is, doubtless, mainly due the comparative immunity from smallpox enjoyed by its inhabitants." (Memorandum by the Army Sanitary Commission on the Administration Report of the Madras Municipality for 1902-3).

"In no city in India is vaccination so efficiently carried out as in the City of Madras, and, as a result, in no city of India is the mortality from smallpox so low. The death-rate from smallpox, calculated on the seven fatal cases which occurred during the calendar year (1903), was only 0.01, and the death-rate for the previous ten years only 0.1." (Memorandum by the Army Sanitary Commission on the Administration Report of the Madras Municipality for 1903-04).

In 1902 there were 72 deaths from smallpox in Madras, 7 in 1903, and 12 in 1904, but in 1905-6 there was a severe epidemic, the deaths being 298 and 620, and the mortality rate reaching 586 and 1,144 per million of the population. In the first half of the year 1911, smallpox was also very rife in Madras, the deaths numbering nearly 400. And this in the most "efficiently" vaccinated city in India!

In 1901 the number of deaths from smallpox in the United Provinces of Agra and Oudh (viz.: 981, equal to a rate of 20.6 per million of the population) was the lowest on record. This led the Sanitary Commissioner to say: "The beneficent effects of vaccination were assuredly never more eloquently proved, and in this respect, we can, I venture to think, compare favourably with many European countries." It only remains to add that in the next year (1902) the deaths rose to 4,976, and in 1903 to 21,950, the latter figure being equal to a rate of 460 per million of the population, *i.e.*, more than twenty times the rate for 1901. In 1907 the deaths were 22,645, and in 1908 59,996, equal to rates of 474 and 1,257 per million, respectively. So much for the "beneficent effects" of vaccination in this large province.

The following appears in the Report of the Sanitary Administration of the Punjab for the year 1906, by Lieut.-Colonel C. J. Bamber, I.M.S. D.P.H., Camb., F.R.S.S.:—

The death-rate from smallpox used to be very much higher in the Punjab in former years, when vaccination was less thoroughly carried out. During the past forty years since the introduction of the system of death registration in 1867, it has been possible to note the considerable reduction that has occurred in the prevalence of smallpox in each successive decennium. Thus, during the first ten year period, the mean death rate from the disease was as high as 1.37 per mille. In the second period it decreased to 0.88, in the third decennium it fell to 0.59, and during the last few years it diminished to 0.45. (P. 10).

It only remains to add that during the year 1908 it rose to 1.42!

The following is a description of the operatives' quarters in Bombay, as given by Mr. Dunn, late Chairman of the Bombay City Improvement Trust, in a paper of 17th February, 1910:—

"The rooms or 'chals,' less than ten feet square, are separated from one another by partitions of wood or split bamboos, plastered with mud. There is no ceiling, only the sloping low roof, which is of rough round rafters, and a single thickness of country tiles. The walls and roof are black with smoke and dirt of many years; the rooms are filled with choking smoke from the wood fires and naked lamps, and there is no exit for this except through the rough doors. The only openings are the doors leading from the rooms on to narrow verandahs, no ventilation, darkness, and a choking atmosphere, and a family of five or six persons, with perhaps a lodger or two. Refuse of all kinds is disposed of by the simple expedient of throwing it outside beyond the verandah, and the condition of the surroundings of the 'chal' may be left to the imagination."

SMALLPOX AMONGST THE JAIL POPULATION OF INDIA. Notwithstanding the fact that all prisoners in India are vaccinated and under constant medical supervision, the Annual Sanitary reports record cases of and deaths from smallpox in the jails every year. Here are the figures for the past few years:—

Year.	Jail Population.	Smallpox Cases.	Smallpox Deaths.
1902	114,334	47	6
1903	101,717	62	6
1904	104,325	25	4
1905	106,265	31	4
1906	110,082	82	9
1907	107,675	65	6
1908	115,403	122	15
1909	112,249	50	2

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Small pox and vaccination in British India

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